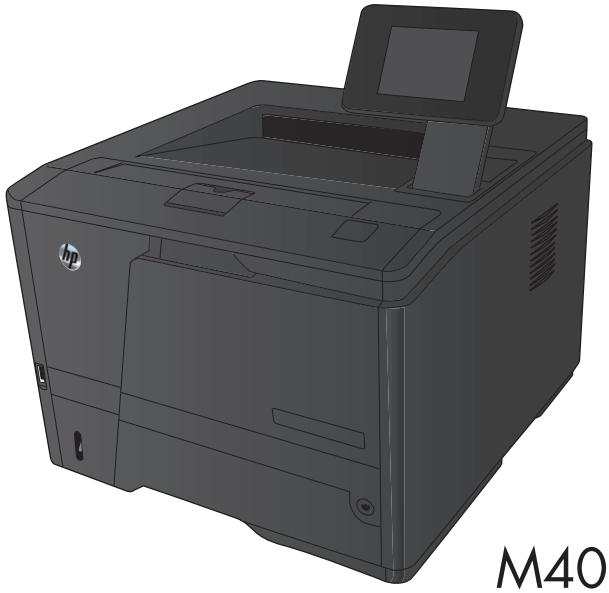
LASERJET PRO 400

Troubleshooting Manual



M401

HP LaserJet Pro 400 M401 Printer Series

Troubleshooting Manual

Copyright and License

© 2012 Copyright Hewlett-Packard Development Company, L.P.

Reproduction, adaptation, or translation without prior written permission is prohibited, except as allowed under the copyright laws.

The information contained herein is subject to change without notice.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Part number: CF270-91001

Edition 1, 4/2012

Trademark Credits

Microsoft®, Windows®, Windows® XP, and Windows Vista® are U.S. registered trademarks of Microsoft Corporation.

Conventions used in this guide

TIP: Tips provide helpful hints or shortcuts.

NOTE: Notes provide important information to explain a concept or to complete a task.

CAUTION: Cautions indicate procedures that you should follow to avoid losing data or damaging the product.

WARNING! Warnings alert you to specific procedures that you should follow to avoid personal injury, catastrophic loss of data, or extensive damage to the product.

Table of contents

1 Theory of operation 1
Basic operation 2
Major product systems 2
Product components 3
Sequence of operation 4
Engine control system 6
DC controller 7
Motor control 9
Fan control 10
High-voltage power supply 11
Fuser control circuit 12
Fuser temperature control 13
Fuser protection function 14
Fuser failure detection 14
Low-voltage power supply 16
Protective function 16
Safety 17
Low-voltage power supply unit failure detection 17
Laser scanner system 18
Laser failure detection 19
Image-formation system 20
Image-formation process 21
Latent-image formation stage 21
Step 1: Primary charging 22
Step 2: Laser-beam exposure 22
Developing stage 22
Step 3: Development 22
Transfer stage 24
Step 4: Transfer 24
Step 5: Separation 24
Fusing stage 25
Step 6: Fusing 25

Drum cleaning stage 26
Step 7: Drum cleaning 26
Pickup and feed system 27
Jam detection 29
Paper feeder (optional Tray 3) 31
Paper feeder operation 33
Jam detection 34
USB flash drive 36

2 Solve problems 37
Solve problems checklist 38
Menu map 40
Print the menu map (LCD control panel) 40
Print the menu map (touchscreen control panel) 40
Troubleshooting process 41
Pre-troubleshooting checklist 41
Determine the problem source 43
Power subsystem 44
Power-on checks 44
Control-panel checks 44
LCD control panel checks 44
Touchscreen control panel checks 45
Tools for troubleshooting 46
Component diagnostics 46
LED diagnostics 46
Network LEDs (network models only) 46
Control panel LEDs 46
Engine diagnostics 47
Engine test 47
Diagrams 47
Plug/jack locations 47
Locations of major components 48
General timing chart 50
General circuit diagrams 51
Use HP Device Toolbox (Windows) 55
Internal print-quality test pages 56
Clean the paper path 56
Clean the paper path (LCD control panel) 56
Clean the paper path (touchscreen control panel) 56
Print the configuration page 57
Print the configuration page from an LCD control panel 57

Print the configuration page from a touchscreen control panel 57
Print-quality troubleshooting tools 58
Repetitive image defect ruler 58
Control panel menus 59
HP Web Services menu 59
Reports menu 59
Quick Forms menu 60
USB Flash Drive menu 61
System Setup menu 61
Service menu 64
Network Setup menu 66
Interpret control panel messages 68
Control panel message types 68
Control panel messages 68
10.x000 Supply Error 68
49 Error Turn off then on 68
50.x Fuser Error Turn off then on 69
51.XX Error Turn off then on 69
54.XX Error Turn off then on 69
55.X Error Turn off then on 69
57 Fan error Turn off then on 70
59.X Error Turn off then on 70
79 Error Turn off then on 70
79 Service error Turn off then on 71
Black cartridge low 71
Black cartridge very low 71
Device error Press [OK] 71
Door open 72
Genuine HP supply installed 72
Install black cartridge 72
Invalid driver Press [OK] 72
Jam in <location> 72
Jam in Tray <X> Clear jam and then Press [OK] 73
Load tray 1 <TYPE>, <SIZE> 73
Load tray 1 PLAIN <SIZE> Cleaning Mode 73
Load tray <X> Press [OK] for available media 73
Load tray <X> <TYPE> <SIZE> 73
Manual Duplex Load tray <X> Press [OK] 74
Manual feed <SIZE>, <TYPE> Press [OK] for available media 74
Memory is low Press [OK] 74
Misprint Press [OK] 74

Print failure, press OK. If error repeats, turn off then on. 75
Rear door open 75
Remove shipping material from toner cartridge 75
Replace black cartridge 75
Supplies low 75
Unexpected size in tray <X> Load <size> Press [OK] 76
Unsupported black cartridge Press [OK] to continue 76
Used black cartridge is installed Press [OK] to continue 76
Event-log messages 76
Print the event log 76
Print the event log (LCD control panel) 76
Print the event log (touchscreen control panel) 77
Show an event log 77
Event log messages 77
Clear jams 80
Common causes of jams 80
Jam locations 80
Clear a jam in Tray 1 81
Clear a jam in Tray 2 82
Clear a jam in optional Tray 3 84
Clear jams from the output bin 85
Clear a jam in the duplexer area 85
Clear a jam in the fuser area 86
Solve paper-handling problems 88
The product picks up multiple sheets of paper 88
The product does not pick up paper 88
Solve image quality problems 89
Print quality examples 89
Clean the product 94
Clean the pickup and separation rollers 94
Clean the paper path 94
Clean the paper path (LCD control panel) 94
Clean the paper path (touchscreen control panel) 94
Clean the touchscreen 95
Solve performance problems 96
Factors affecting print performance 96
Print speeds 97
The product does not print or it prints slowly 97
The product does not print 97
The product prints slowly 98
Solve connectivity problems 99

Solve direct-connect problems 99
Solve network problems 99
Poor physical connection 99
The computer is using the incorrect IP address for the product 99
The computer is unable to communicate with the product 100
The product is using incorrect link and duplex settings for the network 100
New software programs might be causing compatibility problems 100
The computer or workstation might be set up incorrectly 100
The product is disabled, or other network settings are incorrect 100
Solve wireless network problems 101
Wireless connectivity checklist 101
The control panel displays the message: The wireless feature on this product has been turned off 102
The product does not print after the wireless configuration completes 102
The product does not print, and the computer has a third-party firewall installed 102
The wireless connection does not work after moving the wireless router or product 102
Cannot connect more computers to the wireless product 102
The wireless product loses communication when connected to a VPN 103
The network does not appear in the wireless networks list 103
The wireless network is not functioning 103
Service mode functions 104
Service menu 104
Service menu settings 104
Restore the factory-set defaults 104
Restore the factory-set defaults (LCD control panel) 104
Restore the factory-set defaults (touchscreen control panel) 105
Secondary service menu 105
Open the secondary service menu 105
Open the secondary service menu (LCD control panel) 105
Open the secondary service menu (touchscreen control panel) 105
Secondary service menu structure 105
Product resets 106
NVRAM initialization 106
Super NVRAM initialization 107
Manually update the firmware 108
Manually update the firmware (LCD control panel) 108
Manually update the firmware (touchscreen control panel) 108

Appendix A Service and support 109
Hewlett-Packard limited warranty statement 110
HP's Premium Protection Warranty: LaserJet toner cartridge limited warranty statement 112
HP policy on non-HP supplies 113
HP anticounterfeit Web site 114
Data stored on the toner cartridge 115
End User License Agreement 116
OpenSSL 119
Customer support 120
Repack the product 121

Appendix B Product specifications 123
Physical specifications 124
Power consumption, electrical specifications, and acoustic emissions 124
Environmental specifications 124

Appendix C Regulatory information 125
FCC regulations 126
Environmental product stewardship program 127
Protecting the environment 127
Ozone production 127
Power consumption 127
Toner consumption 127
Paper use 127
Plastics 127
HP LaserJet print supplies 128
Return and recycling instructions 128
United States and Puerto Rico 128
Multiple returns (more than one cartridge) 128
Single returns 128
Shipping 128
Non-U.S. returns 129
Paper 129
Material restrictions 129
Disposal of waste equipment by users 129
Electronic hardware recycling 130
Chemical substances 130
Material Safety Data Sheet (MSDS) 130
For more information 130
Declaration of conformity 131

Declaration of conformity 133
Safety statements 135
Laser safety 135
Canadian DOC regulations 135
VCCI statement (Japan) 135
Power cord instructions 135
Power cord statement (Japan) 135
EMC statement (Korea) 136
Laser statement for Finland 136
GS statement (Germany) 137
Substances Table (China) 137
Restriction on Hazardous Substances statement (Turkey) 137
Restriction on Hazardous Substances statement (Ukraine) 137
Additional statements for wireless products 138
FCC compliance statement—United States 138
Australia statement 138
Brazil ANATEL statement 138
Canadian statements 138
European Union regulatory notice 138
Notice for use in France 139
Notice for use in Russia 139
Mexico statement 139
Korean statement 139
Taiwan statement 140
Vietnam Telecom wired/wireless marking for ICTQC Type approved products 140

Index 141

List of tables

Table 1-1 Product components 3
Table 1-2 Sequence of operation 4
Table 1-3 DC controller electrical components 7
Table 1-4 Motor control components 9
Table 1-5 Fan control components 10
Table 1-6 Fuser control circuit components 12
Table 1-7 Pickup and feed system electrical components 28
Table 1-8 Paper feeder components 32
Table 2-1 Plug/jack locations 47
Table 2-2 Major components (1 of 2) 48
Table 2-3 Major components (2 of 2) 49
Table 2-4 Repetitive defects 58
Table 2-5 Event-log messages 77
Table 2-6 Event-log-only messages 78
Table 2-7 Secondary Service menu 105
Table B-1 Physical specifications 124
Table B-2 Operating-environment specifications 124

List of figures

Figure 1-1 Product systems 2
Figure 1-2 Product components 3
Figure 1-3 Optional Tray 3 components 4
Figure 1-4 Engine control system components 6
Figure 1-5 DC controller 7
Figure 1-6 Main motor 9
Figure 1-7 Fan control 10
Figure 1-8 High-voltage power supply 11
Figure 1-9 Fuser control circuit 12
Figure 1-10 Fuser temperature control 13
Figure 1-11 Low-voltage power supply 16
Figure 1-12 Laser scanner system 18
Figure 1-13 Image-formation system 20
Figure 1-14 Image-formation process 21
Figure 1-15 Primary charging process 22
Figure 1-16 Laser-beam exposure 22
Figure 1-17 Development process 23
Figure 1-18 Transfer process 24
Figure 1-19 Separation from the drum 24
Figure 1-20 Fusing 25
Figure 1-21 Drum cleaning 26
Figure 1-22 Pickup and feed system paper path 27
Figure 1-23 Pickup and feed system electrical components 28
Figure 1-24 Jam detection sensors 29
Figure 1-25 Paper-feeder paper path 31
Figure 1-26 Paper feeder signal flow 32
Figure 1-27 Paper feeder electrical components 33
Figure 1-28 Jam detection sensors 34
Figure 2-1 Major components (1 of 2) 48
Figure 2-2 Major components (2 of 2) 49
Figure 2-3 Timing diagram 50
Figure 2-4 Circuit diagram — LCD control panel models 51

Figure 2-5 Circuit diagram — touchscreen control panel models (1 of 2) 52
Figure 2-6 Circuit diagram — touchscreen control panel models (2 of 2) 53
Figure 2-7 Circuit diagram — optional Tray 3 54

1 Theory of operation

- Basic operation
- Engine control system
- Laser scanner system
- Image-formation system
- Pickup and feed system
- Paper feeder (optional Tray 3)
- USB flash drive

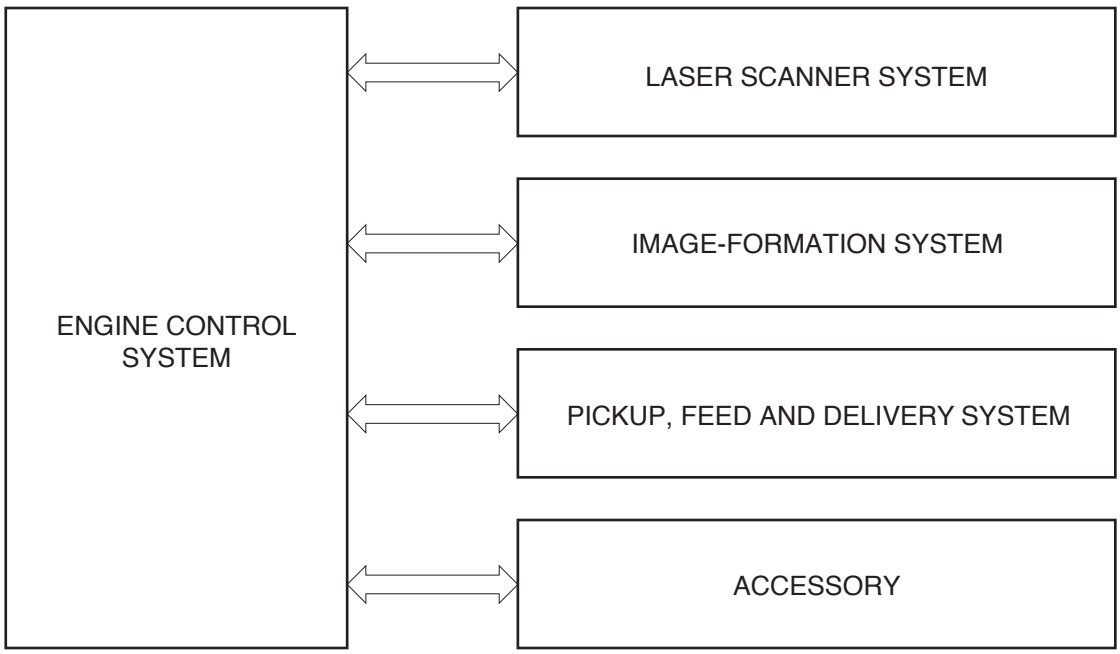
Basic operation

Major product systems

The product includes the following systems:

- Engine control system
- Laser scanner system
- Image-formation system
- Pickup and feed system
- Accessory

Figure 1-1 Product systems



Product components

Figure 1-2 Product components

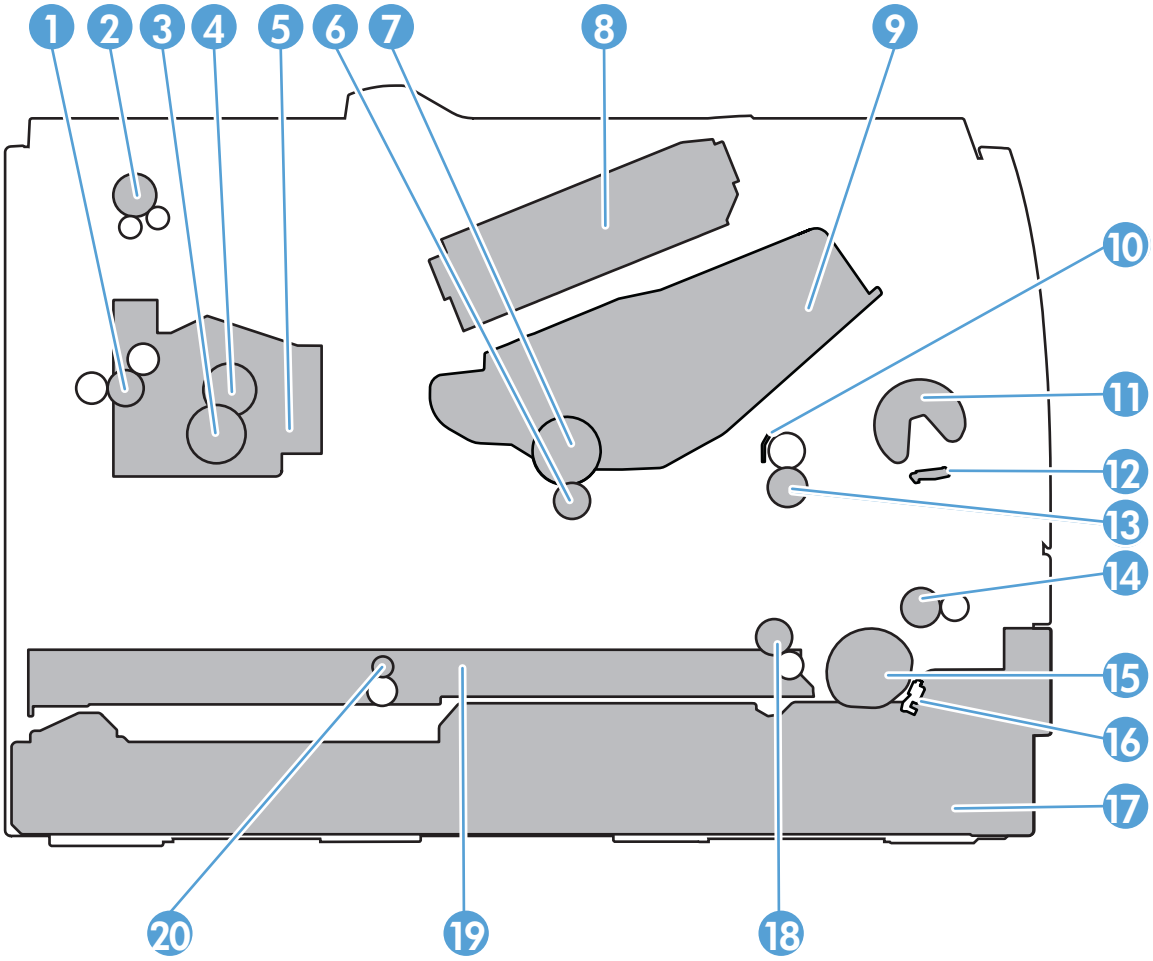
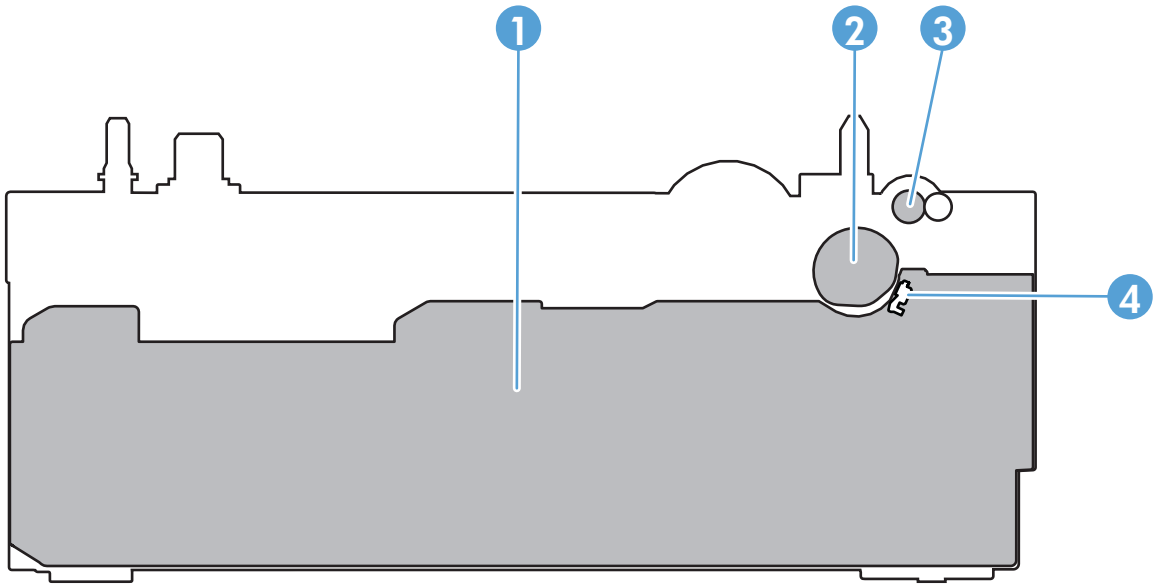


Table 1-1 Product components

Item	Description	Item	Description
1	Fuser delivery roller	11	Multipurpose tray (Tray 1) pickup roller
2	Face-down delivery roller	12	Multipurpose tray (Tray 1) separation pad
3	Pressure roller	13	Registration roller
4	Fuser film assembly	14	Feed roller
5	Fuser	15	Tray 2 cassette pickup roller
6	Transfer roller	16	Tray 2 cassette separation pad
7	Photosensitive drum	17	Tray 2 cassette
8	Laser scanner	18	Duplex re-pickup roller (duplex models only)
9	Toner cartridge	19	Duplex feed assembly (duplex models only)
10	Registration shutter	20	Duplex feed roller (duplex models only)

Figure 1-3 Optional Tray 3 components



Item	Description	Item	Description
1	Tray 3 cassette	3	Tray 3 feed roller
2	Tray 3 pickup roller	4	Tray 3 separation pad

Sequence of operation

The product operational sequence is controlled by the DC controller that is on the engine control system. The following table describes each period of a print operation from when the printer is turned on until the motor stops rotating.

Table 1-2 Sequence of operation

Period	Duration	Purpose	Remarks
WAIT	From the time the power is turned on or the door is closed until the drum-phase adjustment is complete	Brings the product to the ready state	The product detects the toner level, cartridge presence, and environment.
STBY (Standby period)	From end of the WAIT or LSTR period until either the print command is received from the formatter or the power is turned off	Maintains the product in readiness for a print command	The product enters sleep mode when the formatter sends a sleep command.
INTR (Initial rotation)	From the time the print command is received until the fuser temperature reaches its target temperature	Prepares the high-voltage biases, laser scanner, and fuser for printing	

Table 1-2 Sequence of operation (continued)

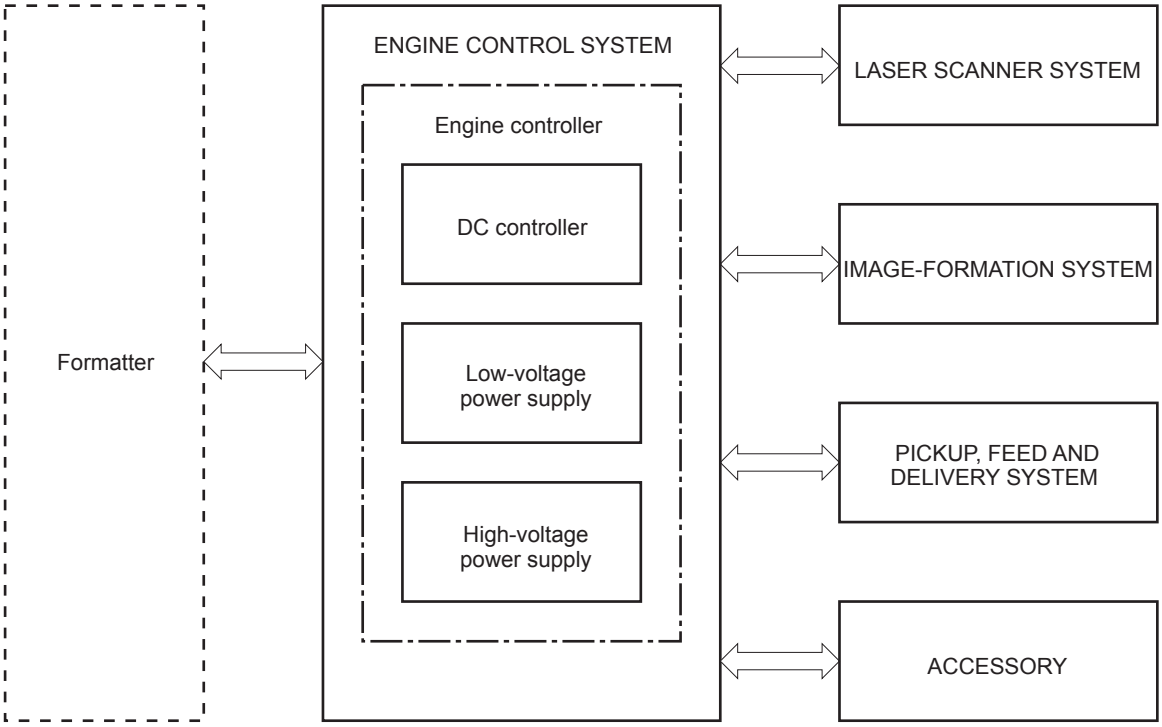
Period	Duration	Purpose	Remarks
PRINT	From the end of INTR period until the fuser paper sensor detects the trailing edge of paper	Forms the images on the photosensitive drum and transfers the toner image to the print media	
LSTR (Last rotation)	From the end of the PRINT period until the delivery motor stops rotating	Moves the printed sheet out of the product, and stops the output from the laser scanner and high-voltage biases	The product enters the INTR period as soon as the formatter sends another print command.

Engine control system

The engine control system coordinates all product functions and drives the other three systems.

The engine control system contains the DC controller, high-voltage power supply PCA, and low-voltage power supply.

Figure 1-4 Engine control system components



DC controller

The DC controller controls the product operational sequence.

Figure 1-5 DC controller

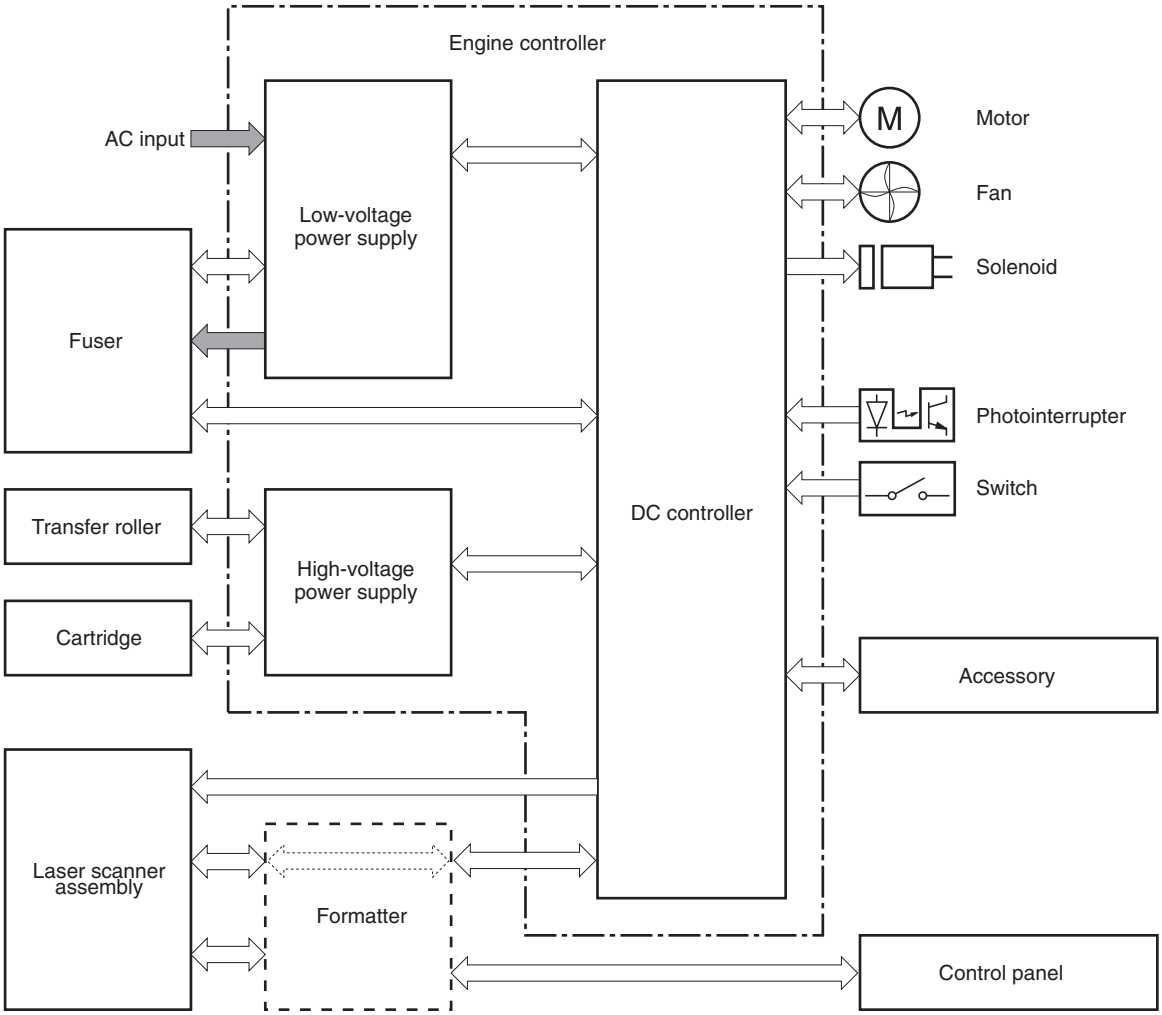


Table 1-3 DC controller electrical components

Component type	Symbol	Description
Fan	FM1	Main fan
Motor	M1	Main motor
	M2	Scanner motor
Solenoid	SL1	Multipurpose tray pickup solenoid
	SL2	Cassette pickup solenoid
	SL3	Duplex reverse solenoid (duplex models only)

Table 1-3 DC controller electrical components (continued)

Component type	Symbol	Description
Switch	SW1001	Power switch
	SW301	Door-open detection switch
Photointerrupter	PS912	Top sensor
	PS913	Paper width sensor
	PS914	Cassette media out sensor
	PS914	Left paper width sensor
	PS915	Multipurpose tray media out sensor
	PS915	Right paper width sensor
	PS916	Fuser output sensor
	PS916	Output-bin paper-full sensor

Motor control

The product has one motor for media feed and image formation.

Figure 1-6 Main motor

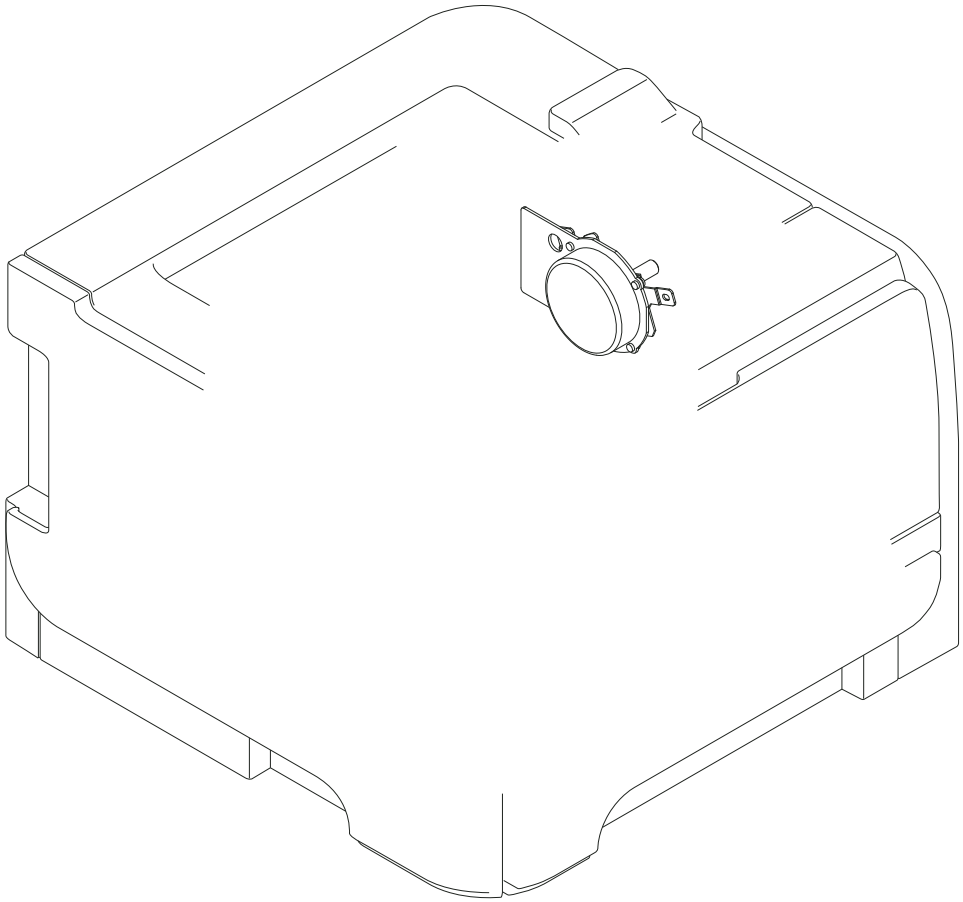


Table 1-4 Motor control components

Symbol	Name	Driving part	Failure detection
M1	Main motor	Rollers in the product an rollers in the paper feeder	Yes

Fan control

The product has one fan for preventing the product from overheating.

Figure 1-7 Fan control

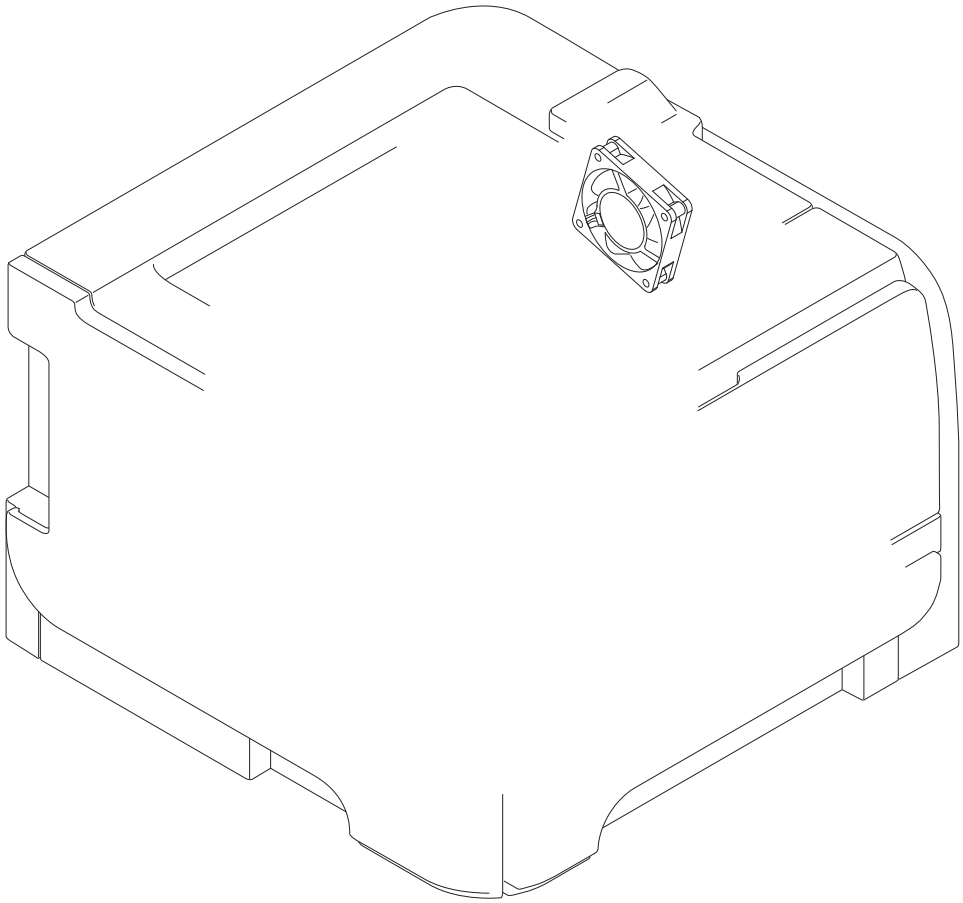


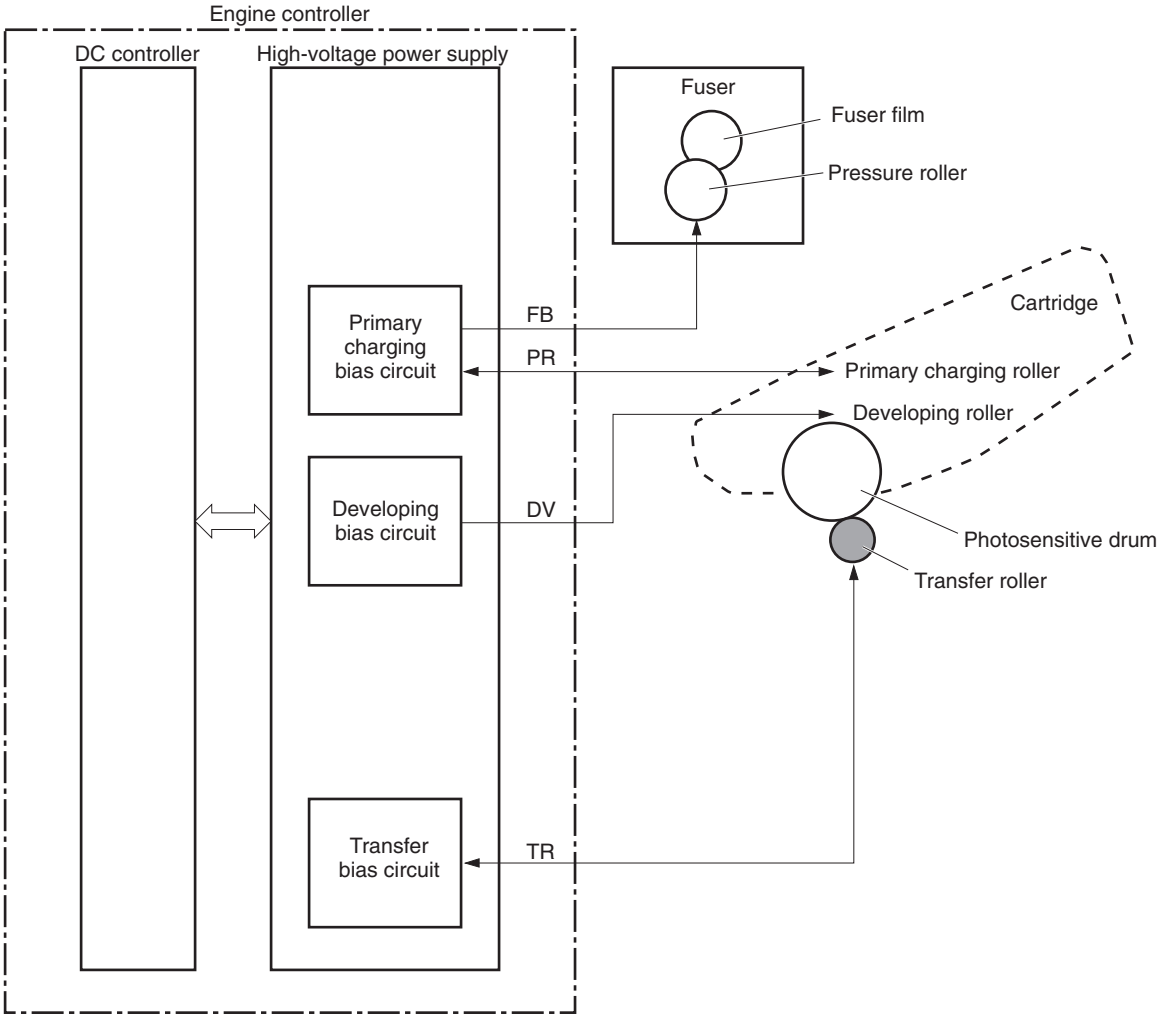
Table 1-5 Fan control components

Symbol	Name	Cooling area	Type	Speed
FM1	Fan	Inside the product	Intake	Full

High-voltage power supply

The DC controller controls the high-voltage power supply to generate high-voltage biases. The high-voltage power supply generates the high-voltage biases that are applied to the primary charging roller, developing roller, transfer roller, and fuser film.

Figure 1-8 High-voltage power supply



Fuser control circuit

The fuser control circuit controls the fuser temperature. The product uses an on-demand fusing method.

Figure 1-9 Fuser control circuit

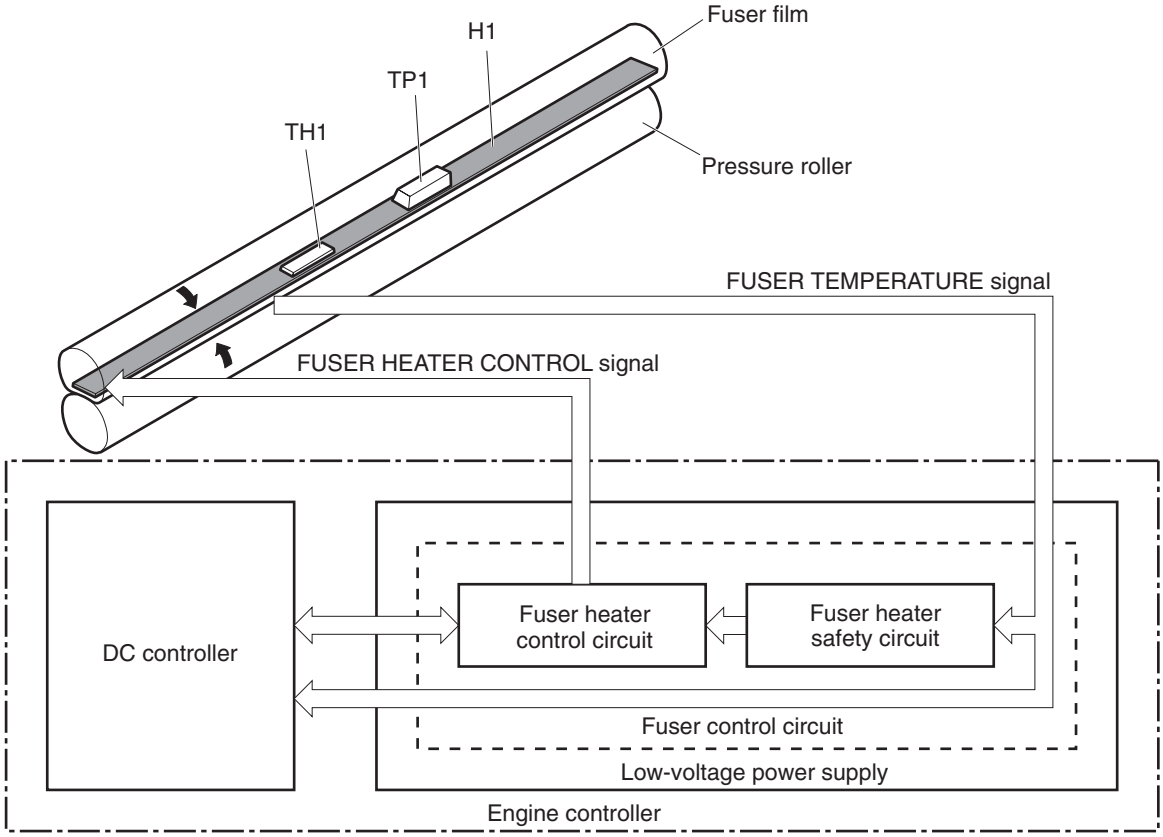


Table 1-6 Fuser control circuit components

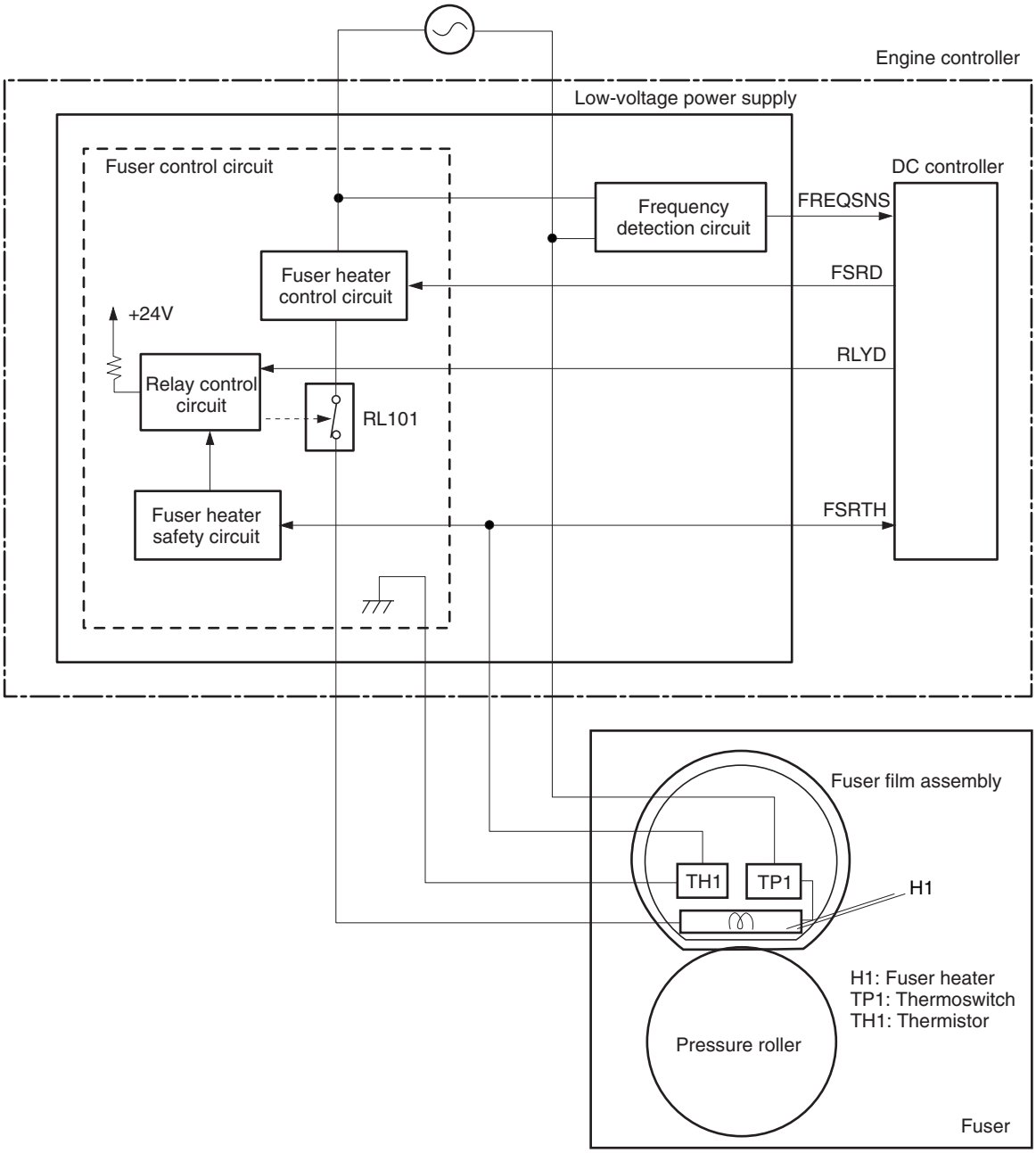
Symbol	Name	Description
H1	Fuser heater	Heats the fuser film
TH1	Thermistor	Detects fuser temperature (contact type)
TP1	Thermoswitch	Prevents an abnormal temperature rise of the fuser heater (contact type)

These temperature controls in the fuser are performed by the fuser heater control circuit and the fuser heater safety. They are controlled by the DC controller.

Fuser temperature control

The fuser temperature control maintains the fuser heater at its targeted temperature.

Figure 1-10 Fuser temperature control



The DC controller monitors the fuser temperature (FSRTH) signal and sends the fuser heater control (FSRD) signal according to the detected temperature. The fuser heater control circuit controls the fuser heater depending on the signal so that the heater remains at the target temperature.

Fuser protection function

When the protective function detects an abnormal temperature rise in the fuser, it interrupts the power supply to the fuser heater. The following components prevent an abnormal temperature rise of the fuser heater:

- **DC controller**: The DC controller monitors the detected temperature of the thermistor. The DC controller makes the fuser heater control signal inactive and releases the relay to interrupt power supply to the fuser heater when it detects that the thermistor temperature is 240° C (464° F) or higher.
- **Fuser heater safety circuit**: The fuser heater safety circuit monitors the detected temperature of the thermistor. The fuser heater safety circuit releases the relay control circuit to interrupt power supply to the fuser heater when it detects that the thermistor temperature is 265° C (509° F) or higher.
- **Thermoswitch**: The contact of the thermoswitch is broken to interrupt power supply to the fuser heater when it detects that the temperature fuse is 230° C (446° F) or higher

Fuser failure detection

The DC controller determines a fuser failure, makes the fuser heater control signal inactive, releases the relay to interrupt power supply to the fuser heater, and notifies the formatter of a failure state when it encounters the following conditions.

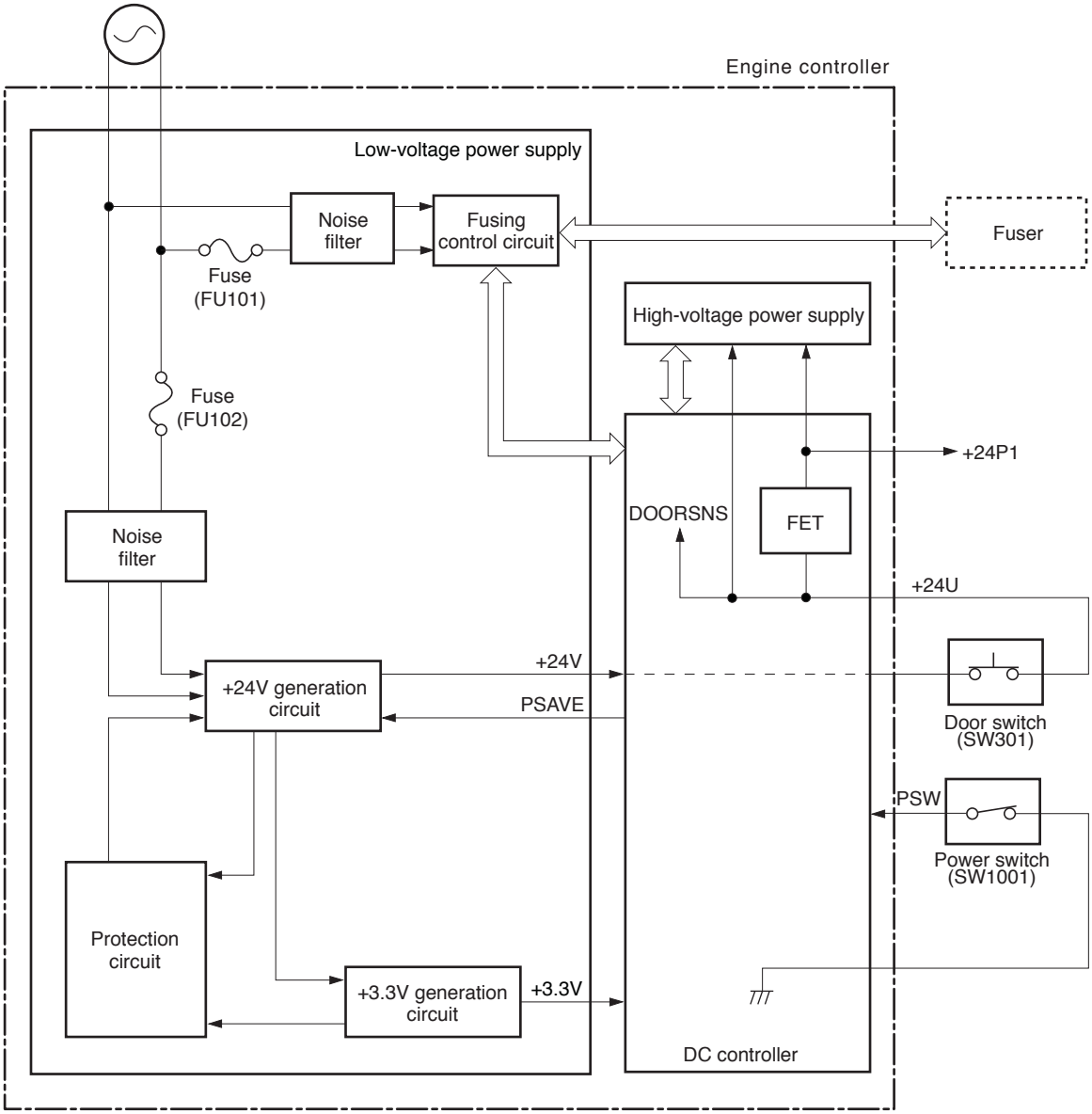
- **Start-up failure**
  - If the detected temperature of the thermistor is kept at a specified temperature or higher for a specified period of heater start-up during the wait period.
  - If the detected temperature of the thermistor is kept at a specified temperature or lower for a specified period under the heater temperature control during the initial rotation period.
  - If the detected temperature of the thermistor is kept at a specified temperature or lower for a specified period under the heater temperature control during the print period.
  - If the detected temperature of the thermistor does not reach its targeted temperature within a specified period under the heater temperature control during the initial rotation period.
- **Abnormal low temperature**
  - If the detected temperature of the thermistor is kept at a specified temperature or lower for a specified period under the heater temperature control.

- **Abnormal high temperature**
  - If the detected temperature of the main thermistor is kept at a specified temperature or higher for a specified period.
- **Drive circuit failure**
  - If a specified frequency of the frequency signal is not detected within a specified period after the product is turned on.
  - If an out of specified frequency of the frequency signal is detected after the product is turned on.

Low-voltage power supply

The low-voltage power supply converts AC power from the power receptacle into DC power to cover the DC loads.

Figure 1-11 Low-voltage power supply



Protective function

The low-voltage power supply has a protective function against overcurrent and overvoltage conditions to prevent failures in the power supply circuit. If an overcurrent or overvoltage event occurs, the system automatically cuts off the output voltage.

If the DC power is not being supplied from the low-voltage power supply, the protective function might have activated. In this case, turn off the power switch, and then unplug the power cord. Do not plug in the power cord or turn the power switch on again until the root cause is found.

In addition, two fuses in the low-voltage power supply protect against an overcurrent event. If an overcurrent event occurs in the AC line, the fuse blows and cuts off the power distribution.

Safety

For safety purposes, the product has a function to interrupt the 24V power supply to the fuser and the high-voltage power supply. The door switch is turned off and 24V power stops if the cartridge door is opened (SW301 is turned off).

The product has the power switch on the DC line, so if the AC power flows, even the power switch is turned off. Be sure to unplug the power cord before disassembling the product.

Low-voltage power supply unit failure detection

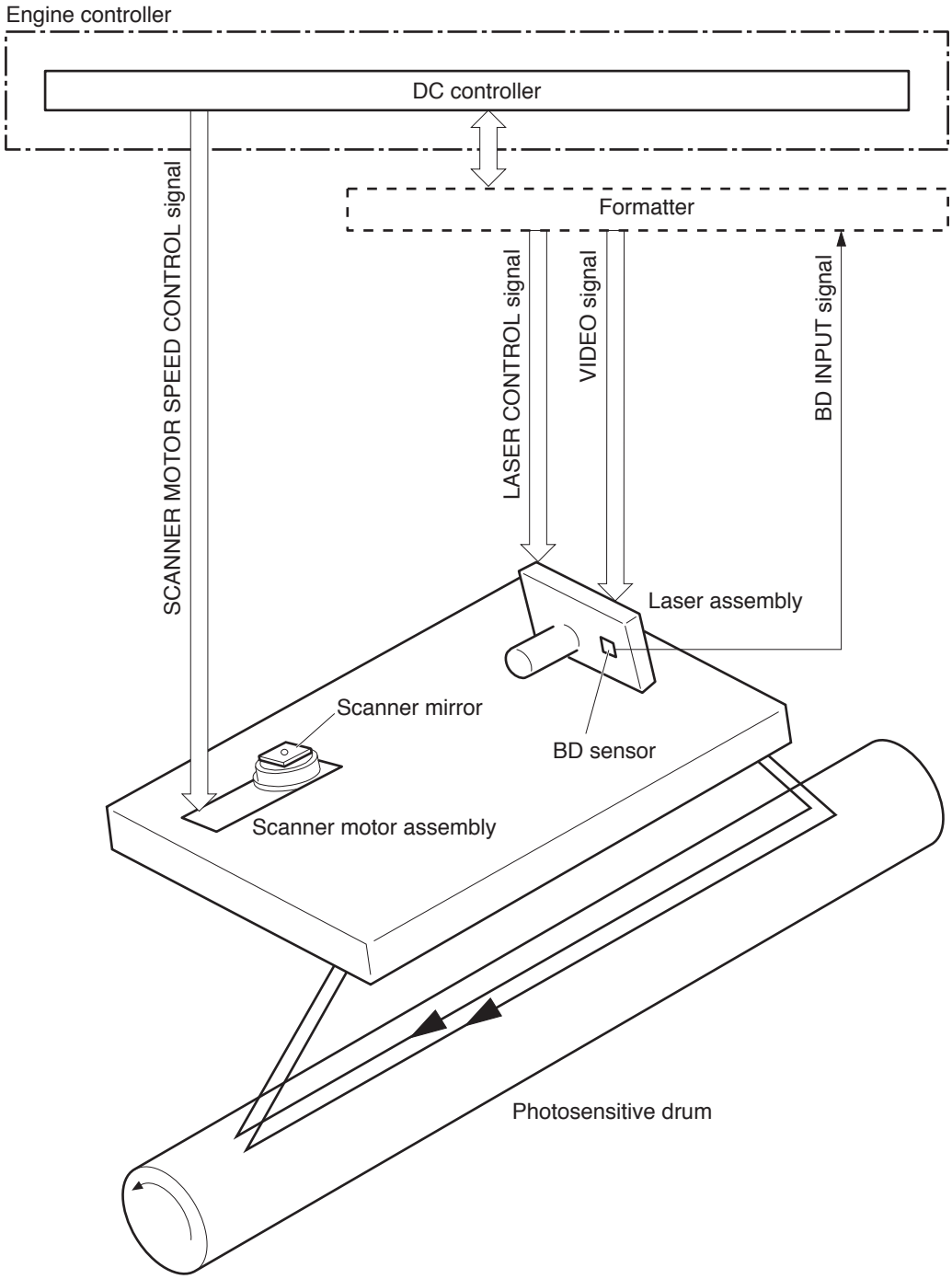
The DC controller determines a low-voltage power supply failure, stops 24V output and notifies the formatter when it detects that the 24V output is higher than the specified voltage.

Laser scanner system

The laser scanner system forms a latent image on the photosensitive drum according to the video signals sent from the formatter.

The main components of the laser scanner are the laser assembly and the scanner motor assembly, which are controlled by the signals sent from the DC controller.

Figure 1-12 Laser scanner system



Laser failure detection

The optical unit failure detection sensor manages the laser scanner unit failure-detection functions. The DC controller identifies the laser scanner unit failure and notifies the formatter if the laser scanner unit encounters the following conditions:

- Scanner motor failure
- BD sensor failure

Image-formation system

The image-formation system forms a toner image on the paper. The image-formation system includes the following components:

- Toner cartridge
- Transfer roller
- Fuser
- Laser scanner

The DC controller controls the laser scanner and high-voltage power supply to form the toner image on the photosensitive drum. The image is transferred to the paper and fused.

Figure 1-13 Image-formation system

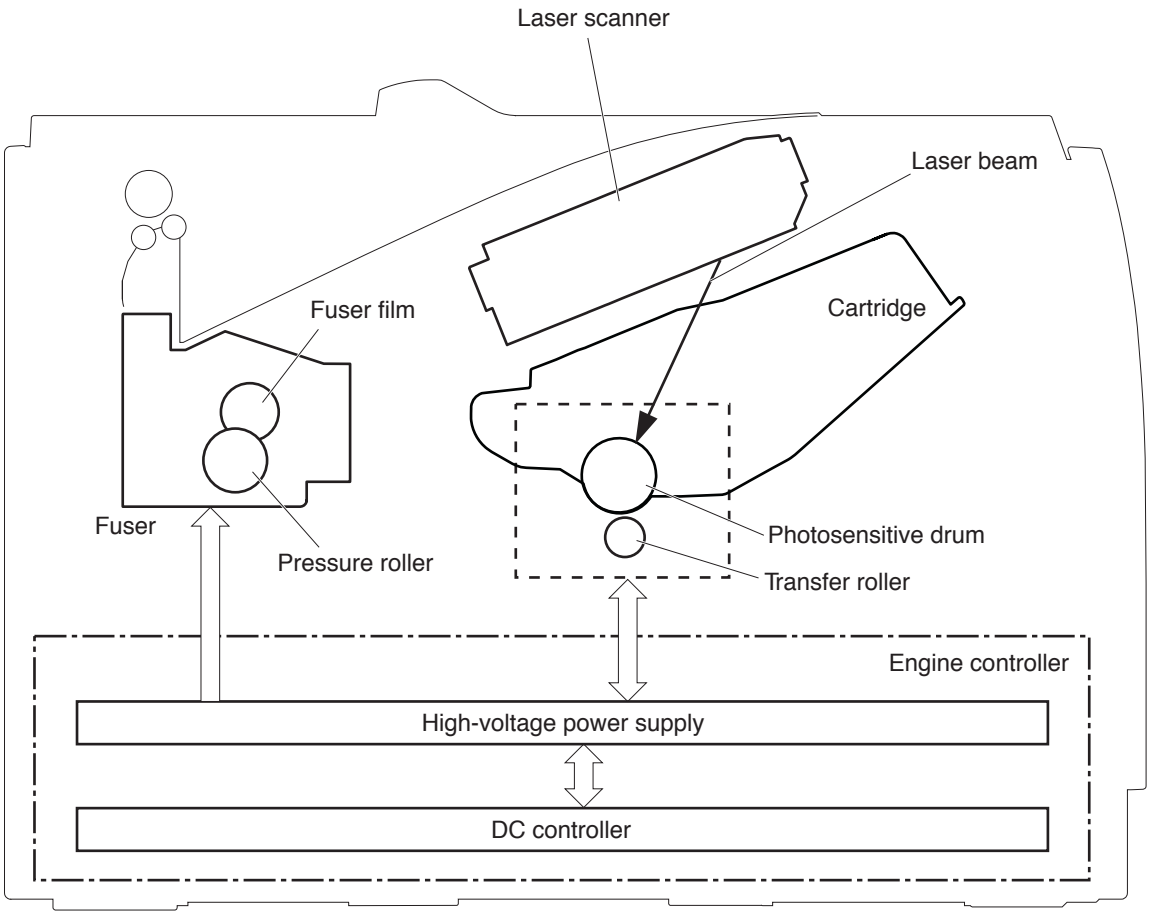


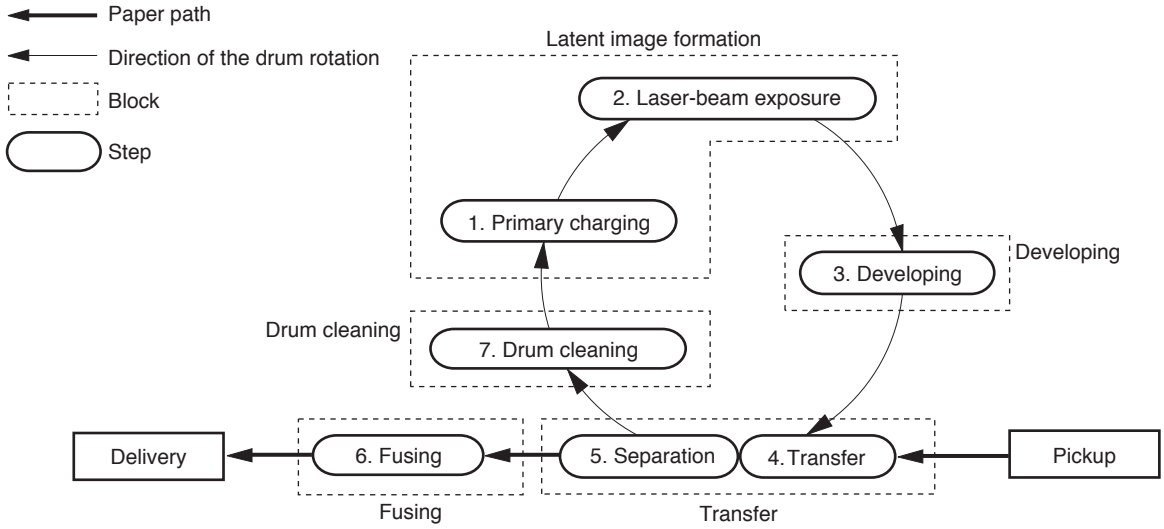
Image-formation process

Laser printing requires the interaction of several different technologies including electronics, optics, and electrographics to provide a printed page. Each process functions independently and must be coordinated with the other processes. Image formation consists of the following processes:

- Latent-image formation
- Development
- Transfer
- Fuser
- Drum cleaning

These processes are divided into seven steps, which are shown below and described in the following sections.

Figure 1-14 Image-formation process



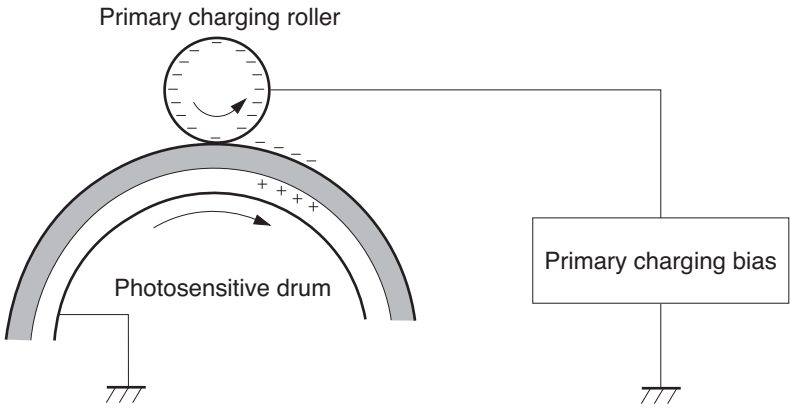
Latent-image formation stage

During the steps that comprise this stage, a latent image is formed by applying a negative charge to the photosensitive drum. You cannot see this image on the drum.

Step 1: Primary charging

To prepare for latent image formation, the surface of the photosensitive drum is charged with a uniform negative charge. The primary charging roller receives the primary charging bias, and then the roller charges the drum directly.

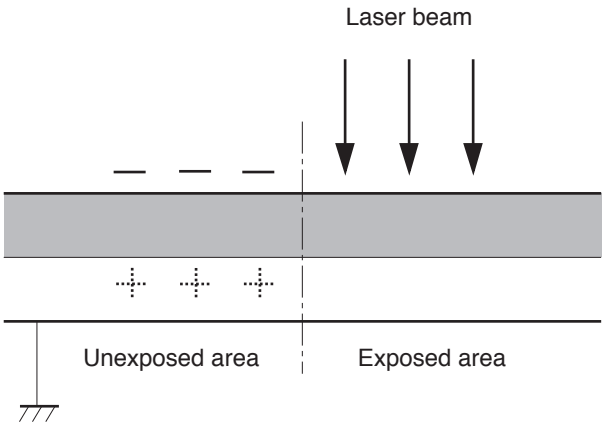
Figure 1-15 Primary charging process



Step 2: Laser-beam exposure

The laser beam scans the photosensitive drum to neutralize the negative charge on portions of the drum surface. An electrostatic latent image forms where the negative charge was neutralized.

Figure 1-16 Laser-beam exposure



Developing stage

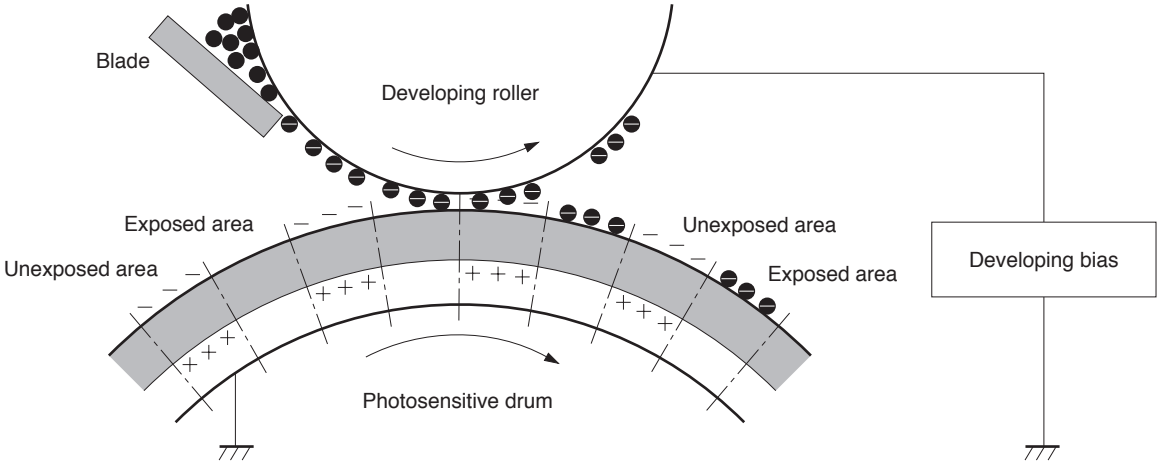
The developing roller contacts the photosensitive drum and deposits toner on the electrostatic latent image, which becomes visible.

Step 3: Development

Toner acquires a negative charge as a result of the friction from the developing roller rotating against the developing blade. When the negatively charged toner comes in contact with the drum, it adheres to

the electrostatic latent image. When the toner is on the drum, the image becomes visible. The developing bias is applied to the developing roller.

Figure 1-17 Development process



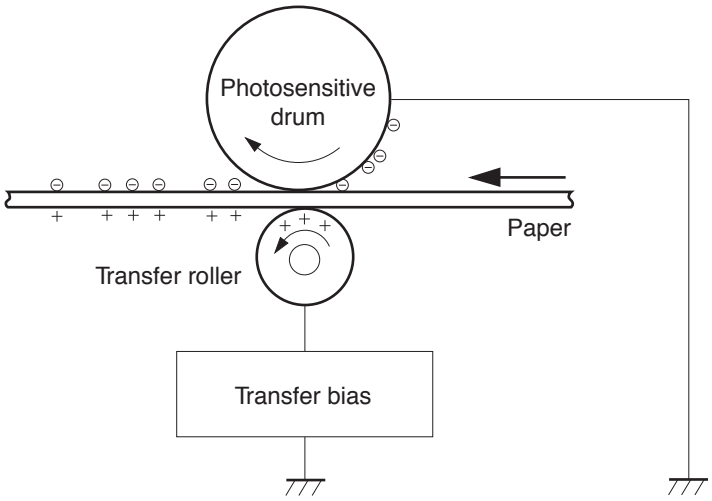
Transfer stage

During the transfer stage, the photosensitive drum transfers a toner image to the paper.

Step 4: Transfer

The transfer bias is applied to the transfer roller to give the paper a positive charge. The positively charged paper attracts the negatively charged toner from the photosensitive drum surface.

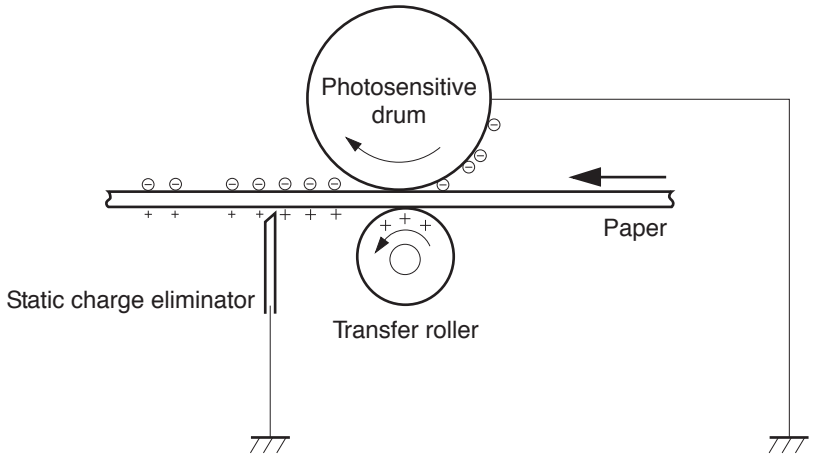
Figure 1-18 Transfer process



Step 5: Separation

The elasticity of the paper and the curvature of the photosensitive drum cause the paper to separate from the drum surface. The static charge eliminator reduces back side static discharge of the paper for stable paper feeding and image quality.

Figure 1-19 Separation from the drum



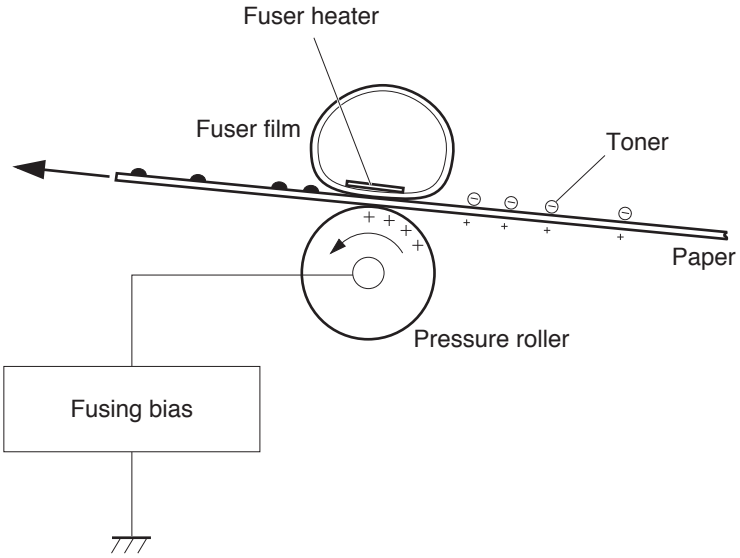
Fusing stage

Until the fusing stage is complete, the image is not permanently affixed to the print media. The toner can be easily smudged until the heat and pressure of the fusing process fix the image to the sheet.

Step 6: Fusing

The product uses an on-demand fusing method to fuse the toner image onto the media. The toner image is permanently affixed to the print media by the heat and pressure. The fusing bias is applied to the pressure roller to improve image quality.

Figure 1-20 Fusing



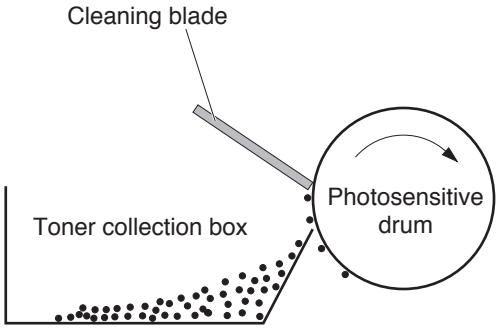
Drum cleaning stage

Not all of the toner is removed from the photosensitive drum during the transfer stage. During the cleaning stage, the residual, or waste, toner is cleared from the drum surface to prepare the surface for the next latent-image formation.

Step 7: Drum cleaning

The cleaning blade scrapes the residual toner off the surface of the photosensitive drum and deposits it in the toner collection box. The drum is now clear and ready for the next image-formation process.

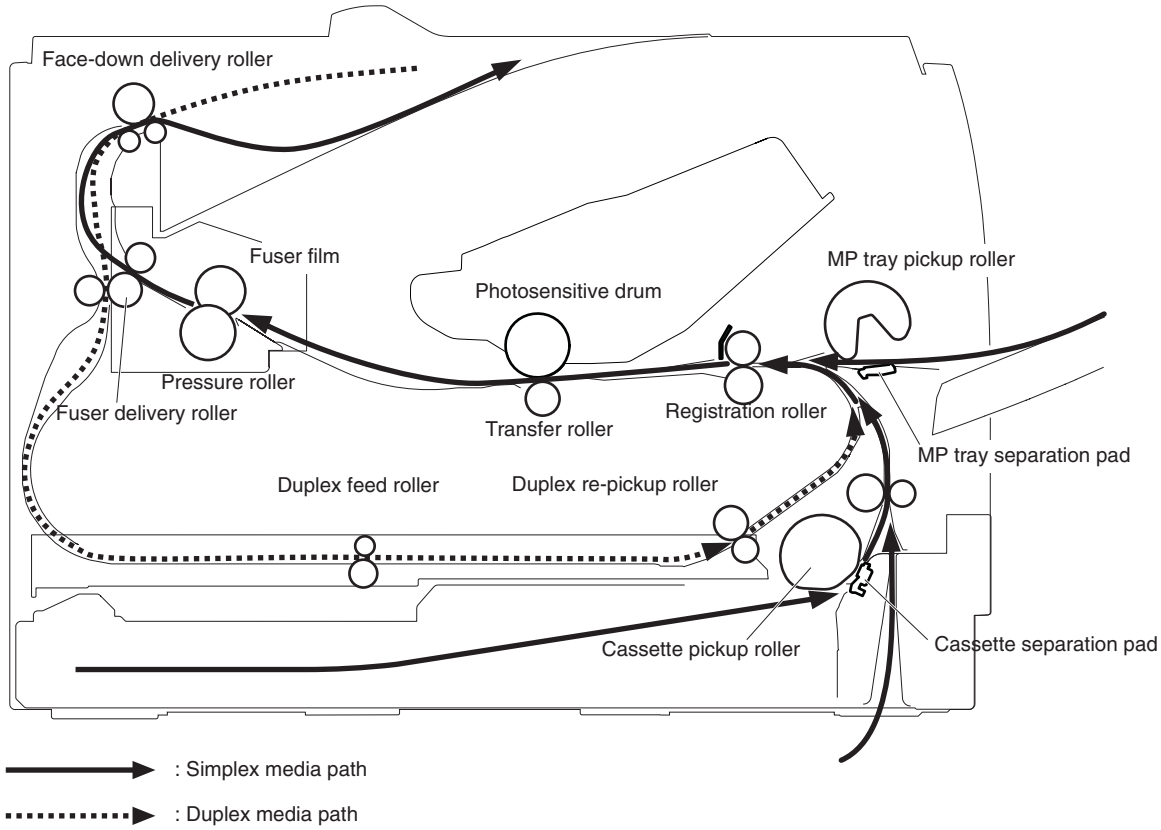
Figure 1-21 Drum cleaning



Pickup and feed system

The system picks up and feeds the print media. It consists of several types of feed rollers. The duplex feed assembly in the duplex models reverses and re-sends the paper to print on second side of paper.

Figure 1-22 Pickup and feed system paper path



The pickup and feed system includes the following electrical components.

Figure 1-23 Pickup and feed system electrical components

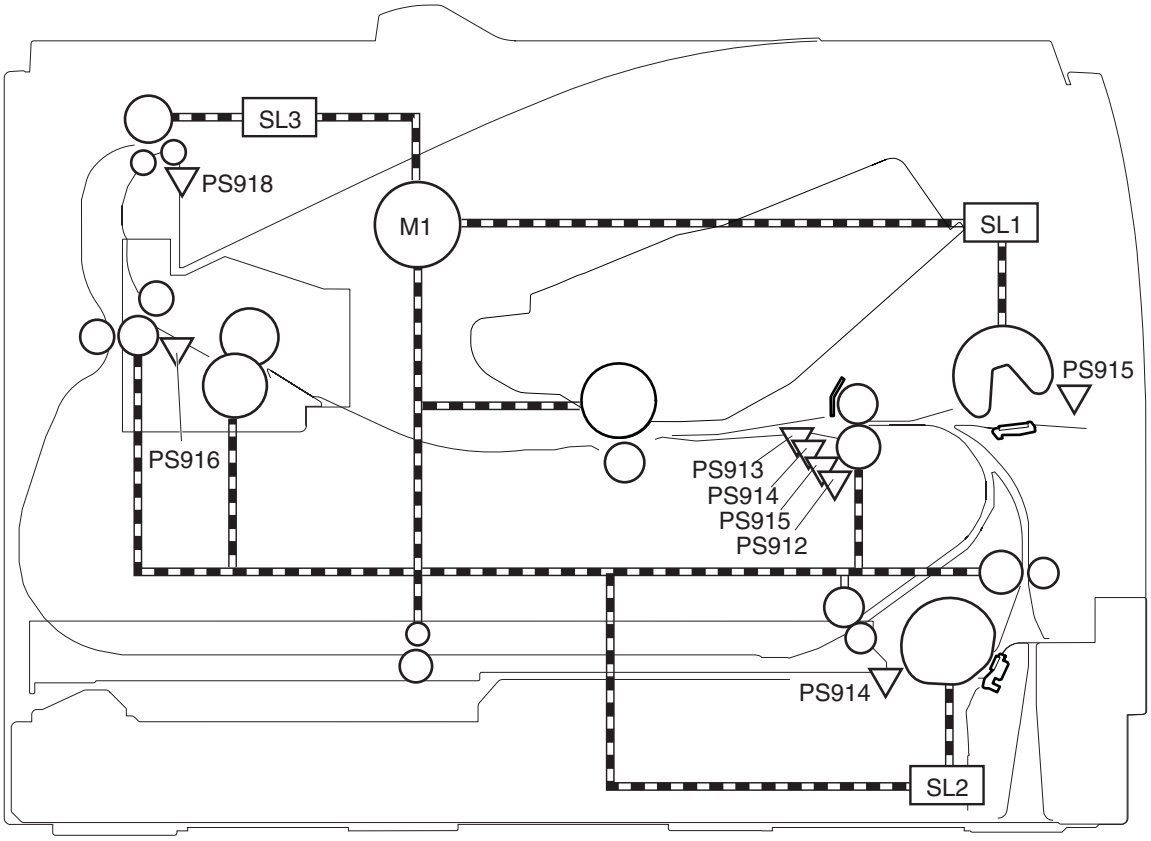


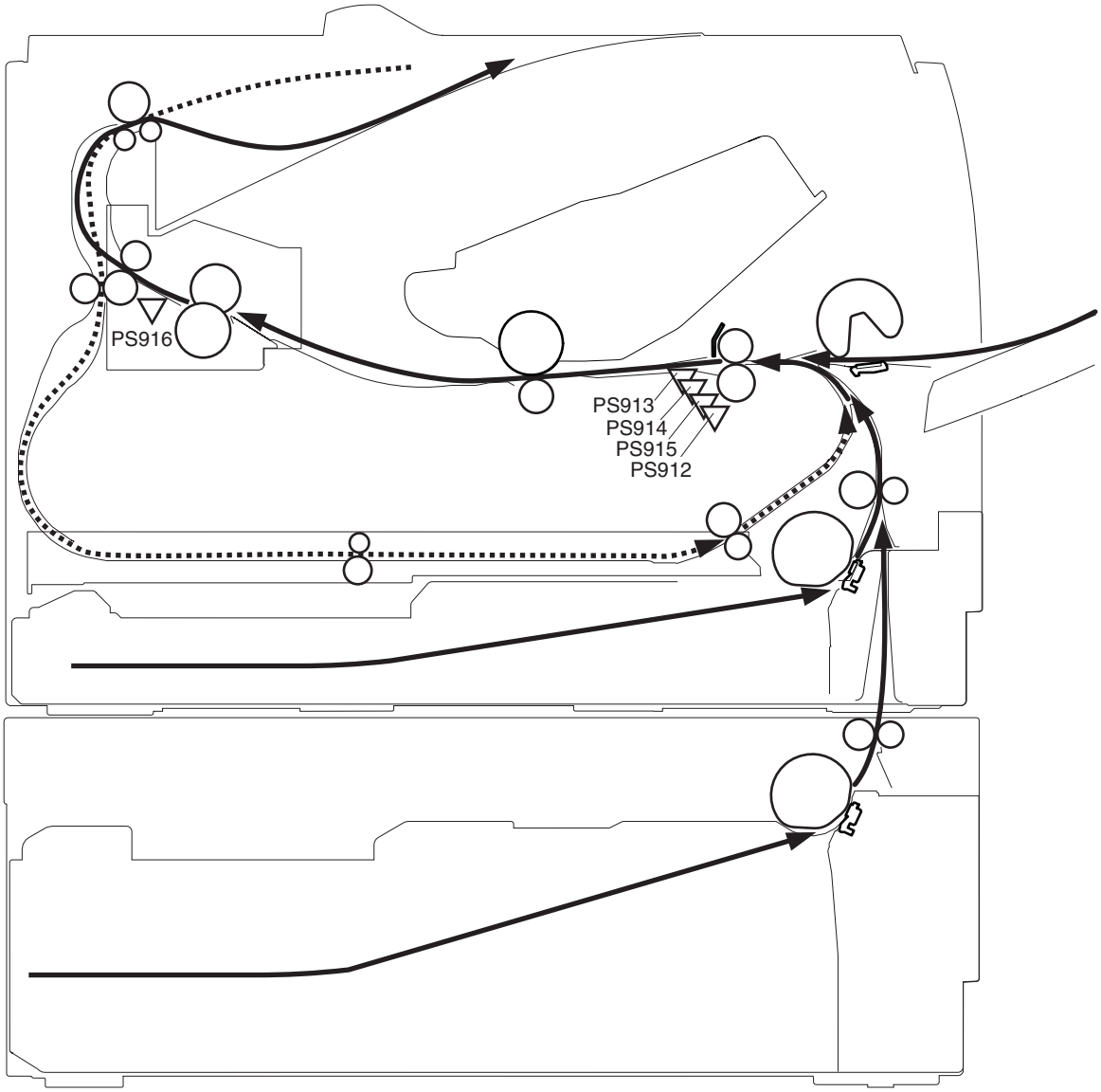
Table 1-7 Pickup and feed system electrical components

Number	Description	Signal
M1	Main motor	Main motor control signal
SL1	Cassette pickup solenoid	Cassette pickup solenoid control signal
SL2	Multipurpose tray pickup solenoid	MP tray pickup solenoid control signal
SL3	Duplex reverse solenoid (duplex models only)	Duplex reverse solenoid control signal
PS912	Top-of-page sensor	Top signal
PS913	Paper width sensor	Media width signal
PS914	Cassette paper out sensor	Cassette media out signal
PS914	Left paper width sensor	Media width signal
PS915	Multipurpose tray media out sensor	MP tray media out signal
PS915	Right paper width sensor	Media width signal
PS916	Fuser output sensor	Fuser output signal
PS918	Output-bin full sensor	Output-bin media-full signal

Jam detection

The product uses the following sensors to detect the presence of paper and to check whether the paper is being fed correctly or has jammed.

Figure 1-24 Jam detection sensors



Number	Description
PS912	Top-of-page sensor
PS913	Paper-width sensor
PS914	Left paper-width sensor

Number	Description
PS915	Right paper-width sensor
PS916	Fuser output sensor

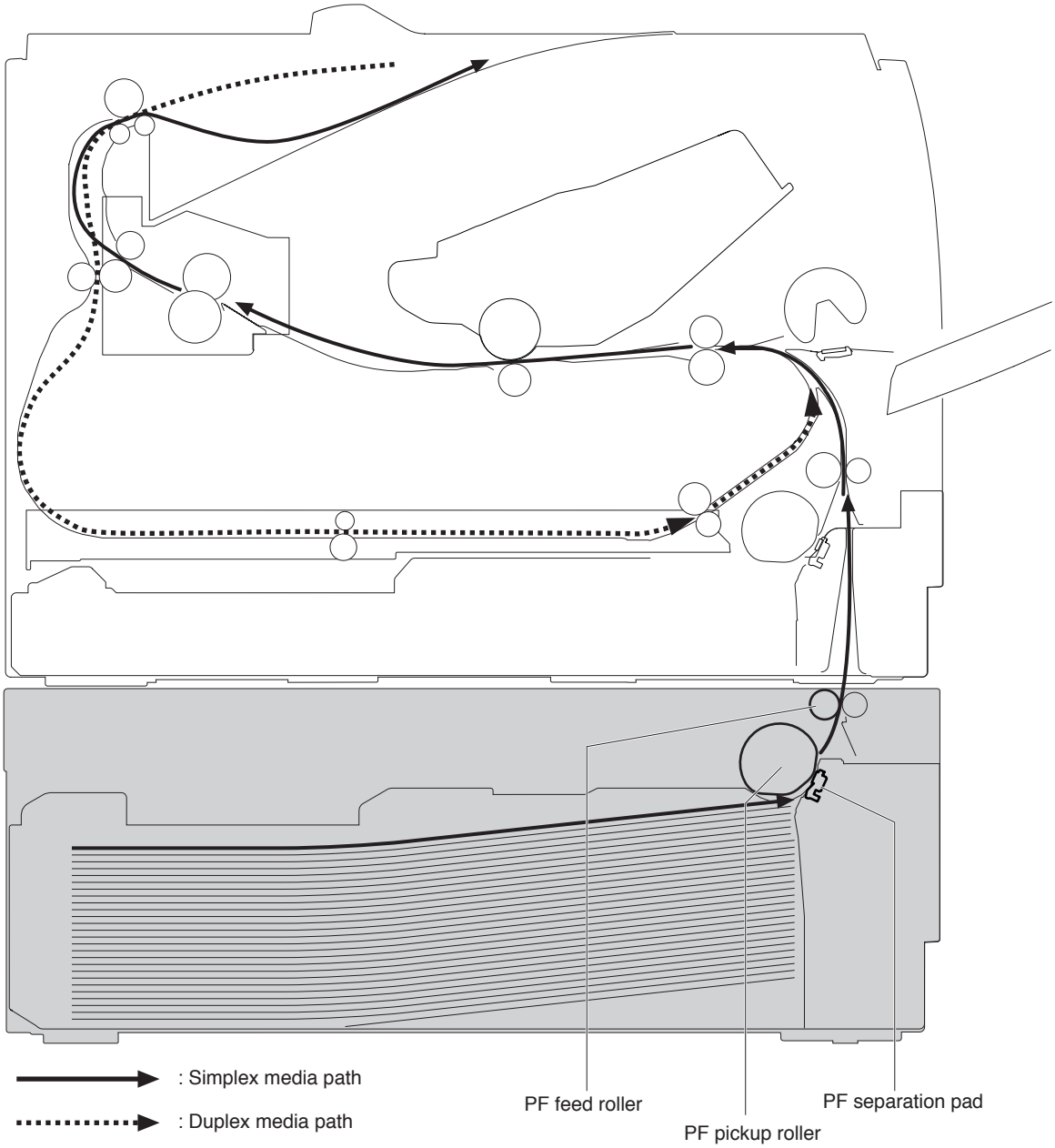
The product detects the following jams:

- Pickup delay jam
- Pickup stationary jam
- Delivery delay jam
- Delivery stationary jam
- Fuser wrapping jam
- Door open jam
- Residual paper jam
- Duplex reverse jam 1 (duplex models only)
- Duplex reverse jam 2 (duplex models only)

Paper feeder (optional Tray 3)

The paper feeder is optionally installed at bottom of the product. It picks up and feeds the paper to the product. The product DC controller controls the paper feeder operational sequence.

Figure 1-25 Paper-feeder paper path



The next figure shows the paper feeder controller signal flow.

Figure 1-26 Paper feeder signal flow

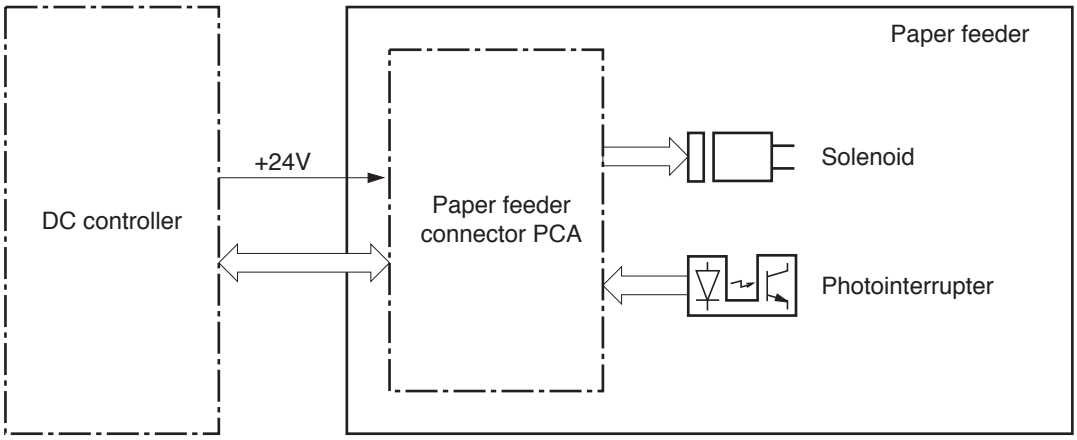


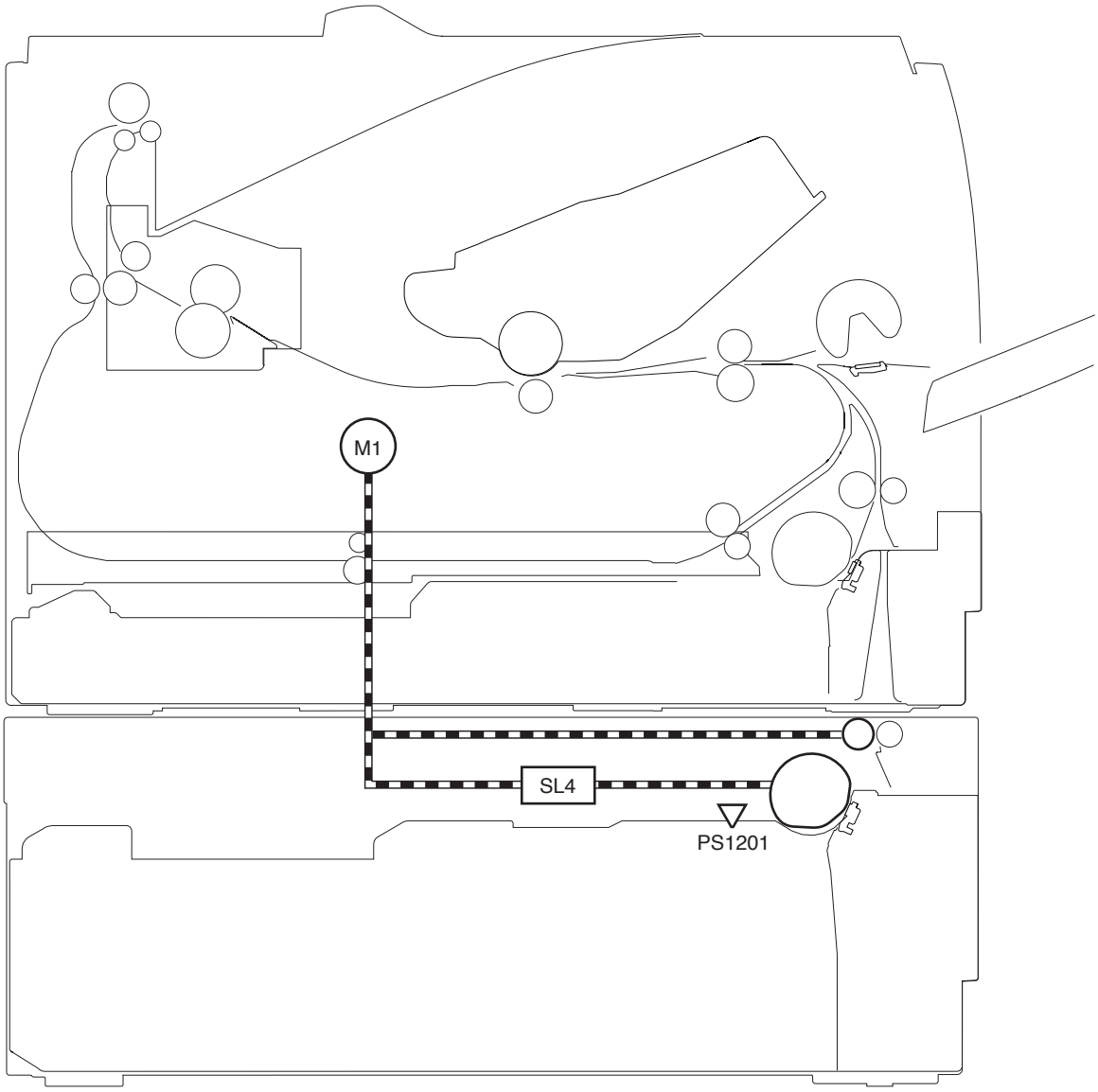
Table 1-8 Paper feeder components

Name	Symbol	Description
Solenoid	SL4	Paper-feed pickup solenoid
Photointerrupter	PS1201	Paper-feeder-cassette paper-out sensor

Paper feeder operation

The paper feeder picks up the paper from the cassette and feeds it to the product.

Figure 1-27 Paper feeder electrical components

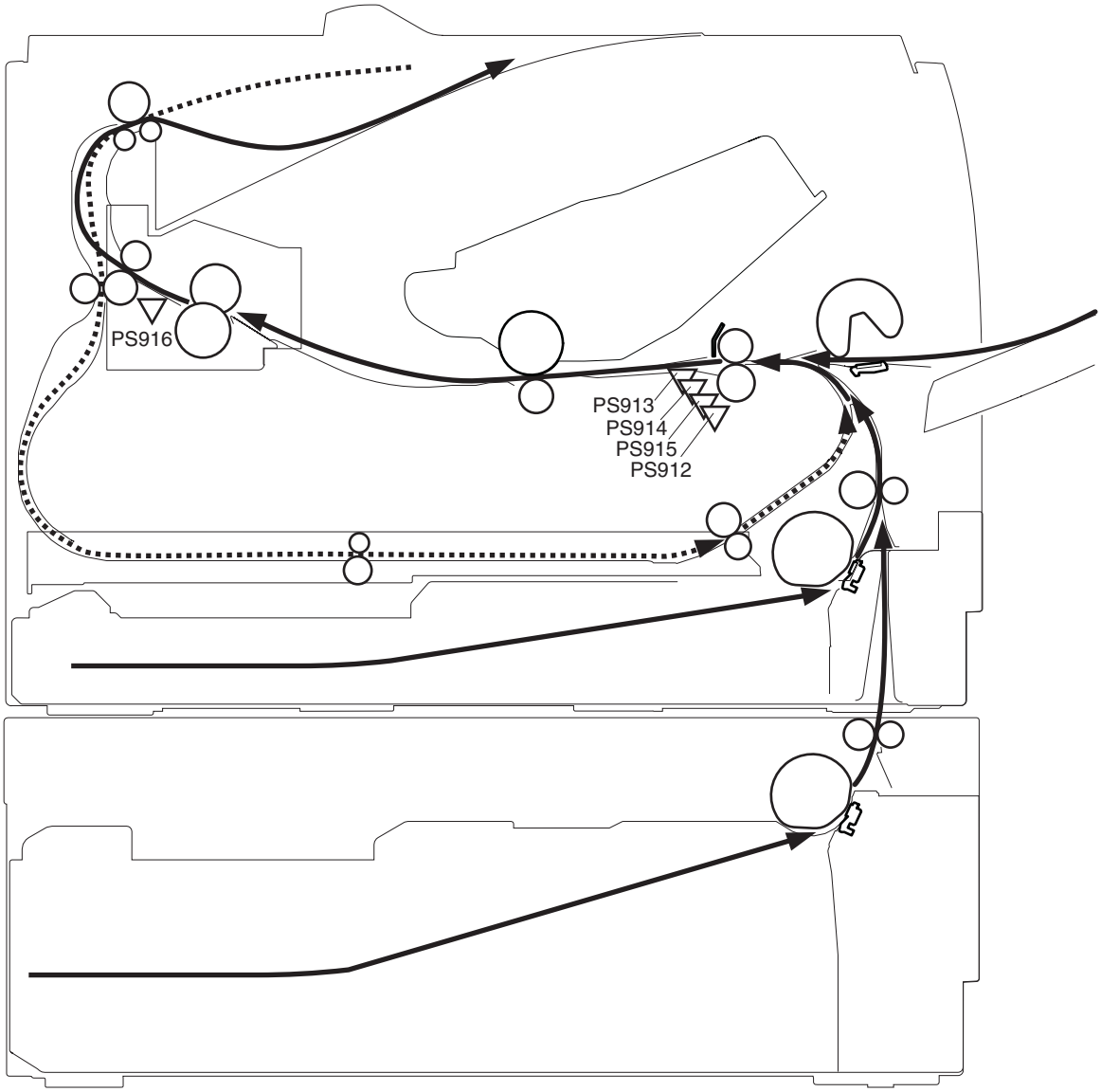


Number	Description	Signal
SL4	Tray 3 cassette pickup solenoid	Tray 3 cassette pickup solenoid control signal
PS1201	Tray 3 cassette paper presence sensor	Tray 3 cassette paper presence signal

Jam detection

The product uses the following sensors to detect the presence of paper and to check whether the paper is being fed correctly or has jammed.

Figure 1-28 Jam detection sensors



Number	Description
PS912	Top-of-page sensor
PS913	Paper-width sensor
PS914	Left paper-width sensor

Number	Description
PS915	Right paper-width sensor
PS916	Fuser output sensor

Paper jam events in the paper feeder are detected by the DC controller. The product detects the following jams:

- Pickup delay jam
- Pickup stationary jam
- Delivery delay jam
- Delivery stationary jam
- Fuser wrapping jam
- Door open jam
- Residual paper jam
- Duplex reverse jam 1 (duplex models only)
- Duplex reverse jam 2 (duplex models only)

USB flash drive

The HP LaserJet Pro 400 M401dn Printer and the HP LaserJet Pro 400 M401dw Printer models feature printing from a USB flash drive. These models print the following file types from the USB flash drive.

- PDF
- RGB JPEG

When a USB flash drive is inserted into the front of the product, the control panel will display the **USB Flash Drive** menu. The files on the USB flash drive can be accessed from the control panel using the touchscreen. Any RGB JPEG or PDF files on the USB flash drive can be printed directly from the product control panel.

2 Solve problems

- Solve problems checklist
- Menu map
- Troubleshooting process
- Tools for troubleshooting
- Clear jams
- Solve paper-handling problems
- Solve image quality problems
- Clean the product
- Solve performance problems
- Solve connectivity problems
- Service mode functions
- Manually update the firmware

Solve problems checklist

1. Make sure that the product is set up correctly.
   a. Press the power button to turn on the product or to deactivate the Auto-Off mode.
   b. Check the power-cable connections.
   c. Make sure that the line voltage is correct for the product power configuration. (See the label that is on the back of the product for voltage requirements.) If you are using a power strip and its voltage is not within specifications, plug the product directly into the wall. If it is already plugged into the wall, try a different outlet.
2. Check the cabling.
   a. Check the cable connection between the product and the computer. Make sure that the connection is secure.
   b. Make sure that the cable itself is not faulty by using a different cable, if possible.
   c. Check the network connection (network models only): Make sure the network light is lit. The network light is next to the network port on the back of the product.

      If the product remains unable to connect to the network, uninstall and then reinstall the product. If the error persists, contact a network administrator.
3. Check to see if any messages appear on the control panel.
4. Make sure that the paper that you are using meets specifications.
5. Make sure that the paper is loaded correctly in the input tray.
6. Make sure that the product software is installed correctly.
7. Verify that you have installed the printer driver for this product, and that you are selecting this product from the list of available printers.
8. Print a configuration page.
   a. If the page does not print, verify that the input tray contains paper and that the paper is properly loaded.
   b. Make sure that the toner cartridge is installed correctly.

c. If the page jams in the product, clear the jam.

d. If the print quality is unacceptable, complete the following steps:

- Verify that the print settings are correct for the paper that you are using.
- Solve print-quality problems.

9. Print a small document from a different program that has worked in the past. If this solution works, then the problem is with the program you are using. If this solution does not work (the document does not print), complete these steps:

a. Try printing the job from another computer that has the product software installed.

b. Check the cable connection. Direct the product to the correct port, or reinstall the software, selecting the connection type that you are using.

Menu map

Use the **Reports** menu to print a menu map of the control panel-menu layout. The active settings for each menu are listed.

Print the menu map (LCD control panel)

1. At the product control panel, press the OK button to open the menus.
2. Select the **Reports** menu, and then press the OK button.
3. Select the **Menu Structure** item, and then press the OK button to print the report.

Print the menu map (touchscreen control panel)

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the **Reports** menu.
3. Touch the **Menu Structure** item to print the report.

Troubleshooting process

When the product malfunctions or encounters an unexpected situation, the product control panel alerts you to the situation. This chapter contains information to help diagnose and solve problems.

- Use the pre-troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart guides you to the section of this chapter that contains steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following issues:

- Are supply items within their rated life?
- Does the configuration page reveal any configuration errors?

NOTE: The customer is responsible for checking supplies and for using supplies that are in good condition.

Pre-troubleshooting checklist

The following table includes basic questions to ask the customer to quickly help define the problem(s).

General topic	Questions
Environment	• Is the product installed on a solid, level surface (+/- 1°)? • Is the power-supply voltage within ± 10 volts of the specified power source? • Is the power-supply plug inserted in the product and the outlet? • Is the operating environment within the specified parameters? • Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? **NOTE:** Diazo copiers produce ammonia gas as part of the copying processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse effect on some product components (for example, the toner cartridge OPC). • Is the product exposed to direct sunlight?
Media	• Does the customer use only supported media? • Is the media in good condition (no curls, folds, or distortion)? • Is the media stored correctly and within environmental limits?
Input trays	• Is the amount of media in the tray within specifications? • Is the media correctly placed in the tray? • Are the paper guides aligned with the stack? • Is the tray correctly installed in the product?

General topic	Questions
Toner cartridge	• Is the toner cartridge installed correctly?
Transfer unit and fuser	• Are the transfer unit and fuser installed correctly?
Covers	• Is the front cover closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the product on for 10 to 20 minutes. • Was a toner cartridge opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge to sit at room temperature for 1 to 2 hours.
Miscellaneous	• Check for and remove any non-HP components (toner cartridges, memory modules, and EIO cards) from the product. • If the hardware or software configuration has not changed or the problem is not associated with any specific software, see the complete service manual for this product. • Remove the product from the network and ensure that the failure is associated with the product before beginning troubleshooting. • For any print-quality issues, calibrate the product.

Determine the problem source

The following table includes basic questions to ask the customer to quickly help define the problem or problems.

General topic	Questions
Environment	• Is the product installed on a solid, level surface (± 1°)? • Is the power-supply voltage within ± 10 volts of the specified power source? • Is the power-supply plug inserted in the product and the outlet? • Is the operating environment within the specified parameters? • Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? **NOTE:** Diazo copiers produce ammonia gas as part of the coping processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse affect on some product components (for example, the toner cartridge imaging drum). • Is the product exposed to direct sunlight?
Paper	• Does the customer use only supported paper? • Is the paper in good condition (no curls, folds, or distortion)? • Is the paper stored correctly and within environmental limits?
Input tray	• Is the amount of paper in the tray within specifications? • Is the paper correctly placed in the tray? • Are the paper guides aligned with the stack?
Supplies	• Is the toner cartridge installed correctly and firmly seated? • Has the sealing tape been removed from the toner cartridge? • Is the toner cartridge within its estimated life? (Check the supplies status page.)
Transfer roller and fuser	• Are the transfer roller and fuser installed correctly?
Covers	• Are the front and rear doors firmly closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the product on for 90 to 120 minutes. • Was a toner cartridge opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge to sit at room temperature for 1 to 2 hours.
Miscellaneous	• Check for and remove any non-HP components (for example, a toner cartridge) from the product. • Remove the product from the network and make sure that the failure is with the product before beginning troubleshooting.

Power subsystem

Power-on checks

When you turn on the product, if it does not make any sound or if the control-panel display is blank, check the following items:

- Verify that the product is plugged directly into an active electrical outlet that has the correct voltage. Do not plug the product into a surge protector or power strip.
- Verify that the on/off switch is in the on position.
- Verify that the formatter is seated and operating correctly.
- Remove any HP Jetdirect accessories or other devices, and then try to turn the product on again.
- Make sure that the control-panel display is connected.
- Check the two fuses on the power supply.
- If necessary, replace the power supply.
- If necessary, replace the DC controller.

Control-panel checks

Use the product control panel to conduct tests on the control panel LEDs, display, or buttons.

LCD control panel checks

1. On the product control panel, press the OK button to open the menus.
2. Press the left arrow button, and then quickly press the Cancel ✕ button. The display should return to Ready status.
3. Press the OK button again to open the menus. The first menu should be the **2ndary Service** menu.
4. Press the OK button again to open the **2ndary Service** menu, and then navigate to one of the following menu items.
   - **LED Test**
   - **Display Test**
   - **Button Test**
5. Press the OK button to begin the selected test.
6. After the test has finished, return the product to the Ready state, and then press the Cancel ✕ button to remove the **2ndary Service** menu from the menu list.

Touchscreen control panel checks

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the left arrow button, and then quickly touch the Cancel button. The display should return to Ready status.
3. Press the Setup button again to open the menus. The first menu should be the **2ndary Service** menu.
4. Touch the **2ndary Service** menu, and then scroll to one of the following menu items.
   - **LED Test**
   - **Display Test**
   - **Button Test**
5. Touch the menu item to begin the test.
6. After the test has finished, return the product to the Ready state, and then touch the Cancel button to remove the **2ndary Service** menu from the menu list.

Tools for troubleshooting

Component diagnostics

LED diagnostics

Network LEDs (network models only)

The onboard network solution has two network port LEDs. When the product is connected to a properly working network through a network cable, the yellow LED indicates network activity, and the green LED indicates the link status. A blinking yellow LED indicates network traffic. If the green LED is off, a link has failed.

For link failures, check all of the network cable connections. In addition, you can try to manually configure the network card link speed setting by using the product control-panel.

Change the Link Speed setting on an LCD control panel

1. At the product control panel, press the OK button to open the menus.
2. Select the **Network Setup** menu, and then press the OK button.
3. Select the **Link Speed** item, and then press the OK button.
4. Select the appropriate link speed, and then press the OK button.

Change the Link Speed setting on a touchscreen control panel

1. From the Home screen on the product control panel, touch the Setup button.
2. Scroll to, and then touch the **Network Setup** menu.
3. Scroll to, and then touch **Link Speed** item.
4. Touch the appropriate link speed.

Control panel LEDs

The state of the Ready light and Attention light on the product signal the product status. The following table outlines the possible control-panel light states.

Product state	Ready light state	Attention light state
Initializing	Blinking	Blinking
Ready	On	Off
Receiving data/processing job or cancelling job	Blinking	Off
Error message	Off	Blinking

Product state	Ready light state	Attention light state
Fatal error (49 or 79 error)[1]	On	On

[1] The product will power off and then power on after one of these errors occurs.

Engine diagnostics

Engine test

If the duplex unit is disabled, the engine test produces a single-sided sheet with horizontal lines when you perform the engine test. If the duplex unit is activated (the default state), the engine test produces a double-sided sheet with horizontal lines when you perform the engine test.

To perform the test, with the product in the Ready state, open and shut the cartridge door three times. If the engine is functioning properly, the product will initialize and then print the test page

Diagrams

Plug/jack locations

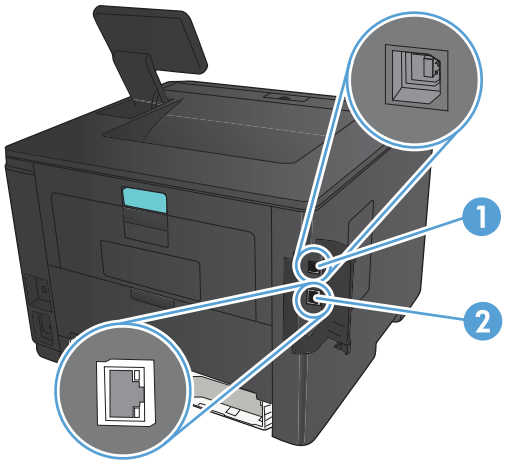


Table 2-1 Plug/jack locations

Item	Description
1	Hi-Speed USB 2.0 port
2	Network port

Locations of major components

Figure 2-1 Major components (1 of 2)

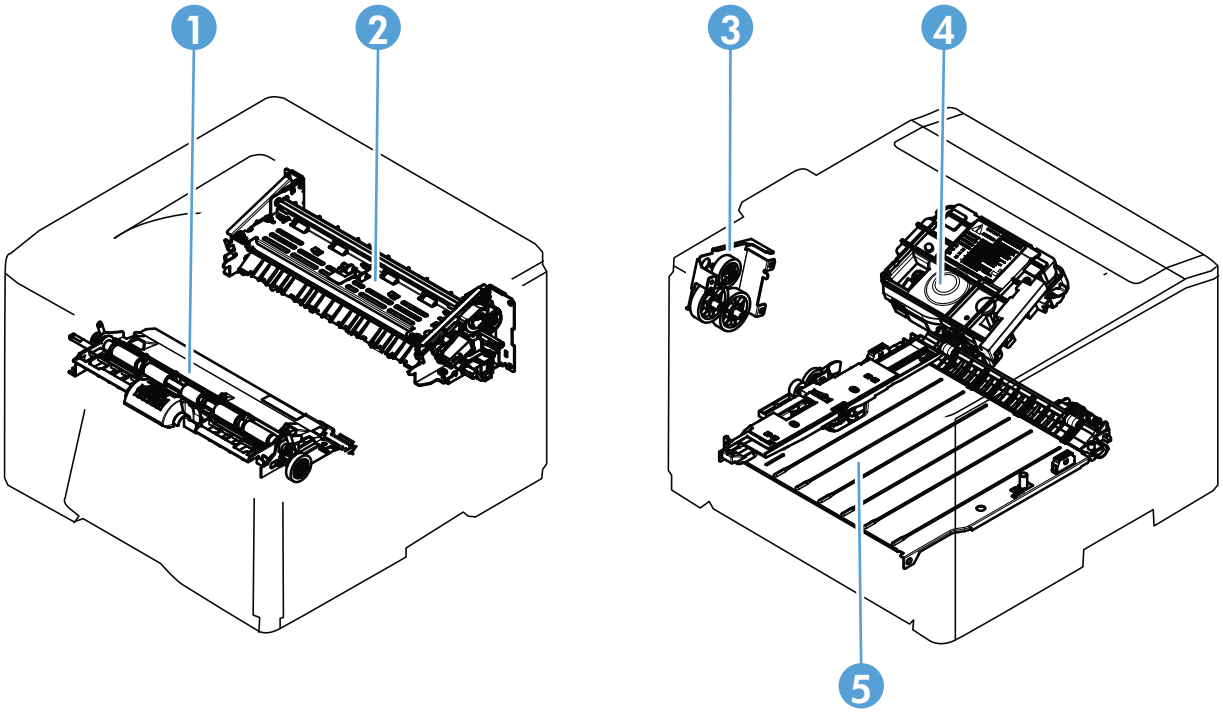


Table 2-2 Major components (1 of 2)

Item	Description
1	Registration assembly
2	Fuser assembly
3	Feed drive assembly (simplex models) Duplex drive assembly (duplex models)
4	Laser scanner assembly
5	Duplex feed assembly

Figure 2-2 Major components (2 of 2)

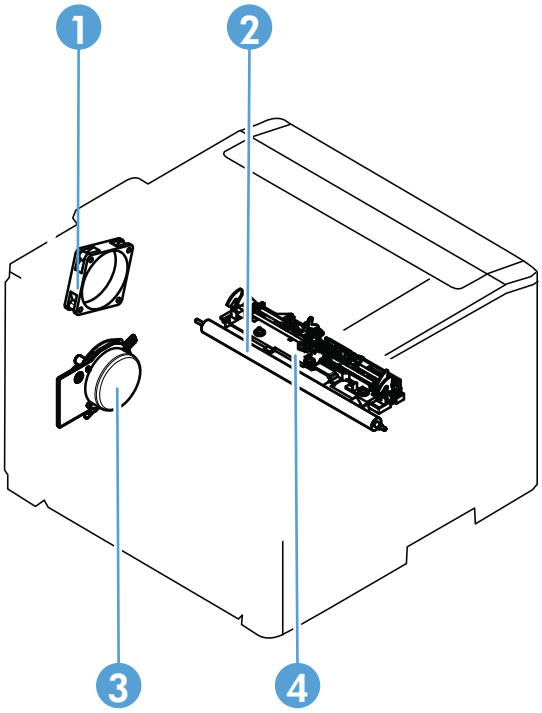


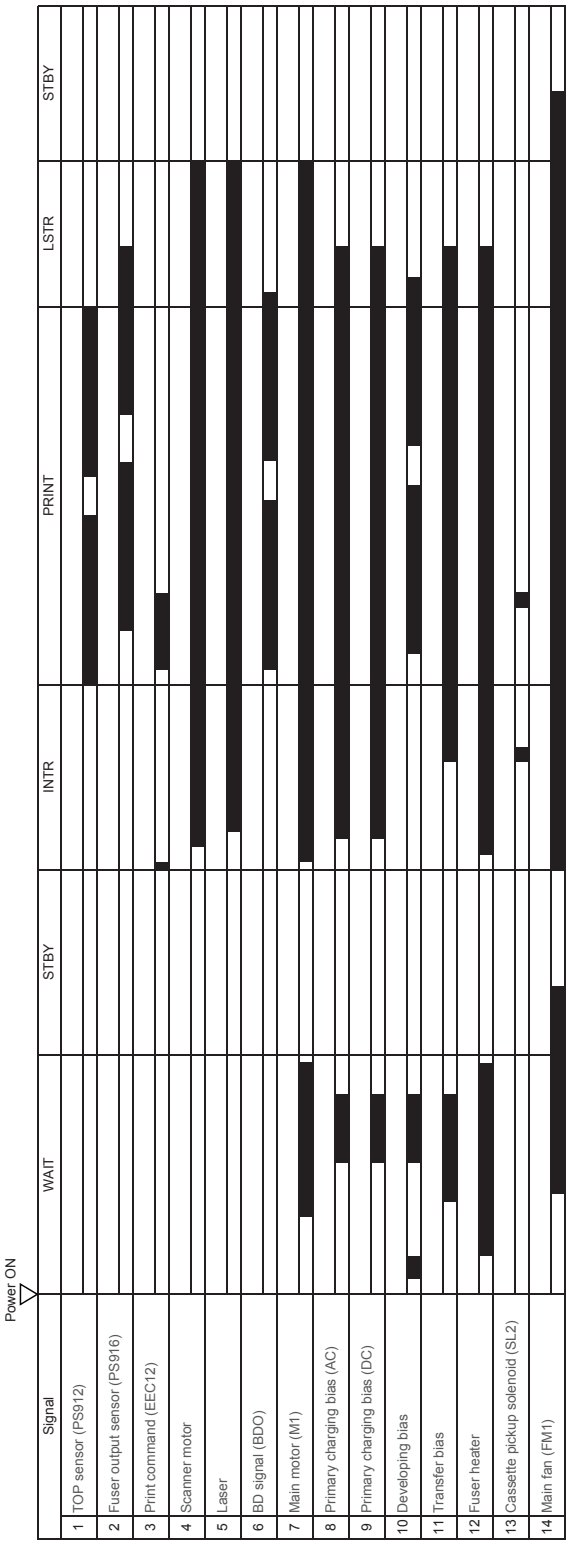
Table 2-3 Major components (2 of 2)

Item	Description
1	Fan
2	Transfer roller
3	Main motor
4	Sensor assembly

General timing chart

The following charts lists the approximate timing for this product, specified in seconds.

Figure 2-3 Timing diagram



General circuit diagrams

Figure 2-4 Circuit diagram — LCD control panel models

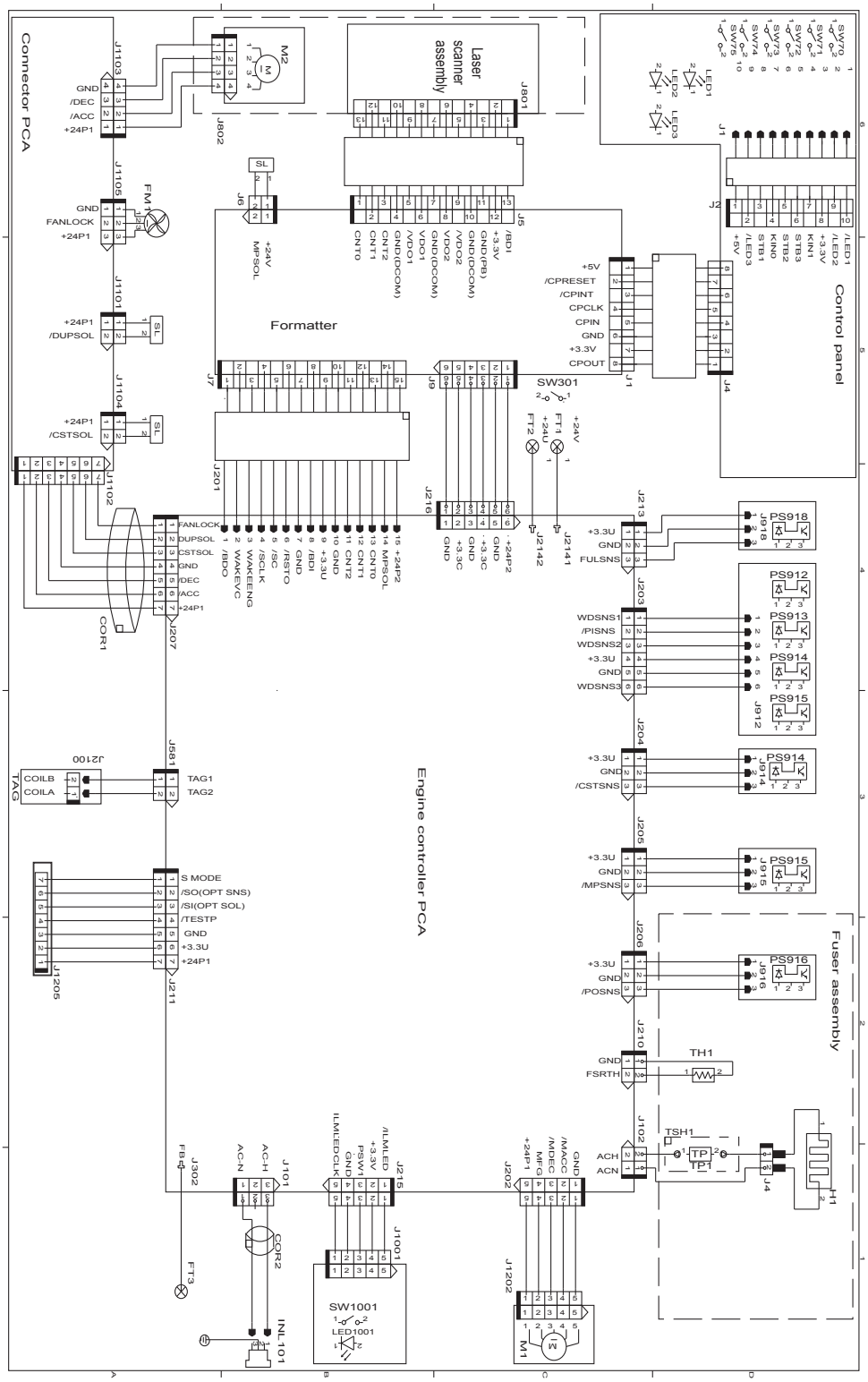


Figure 2-5 Circuit diagram — touchscreen control panel models (1 of 2)

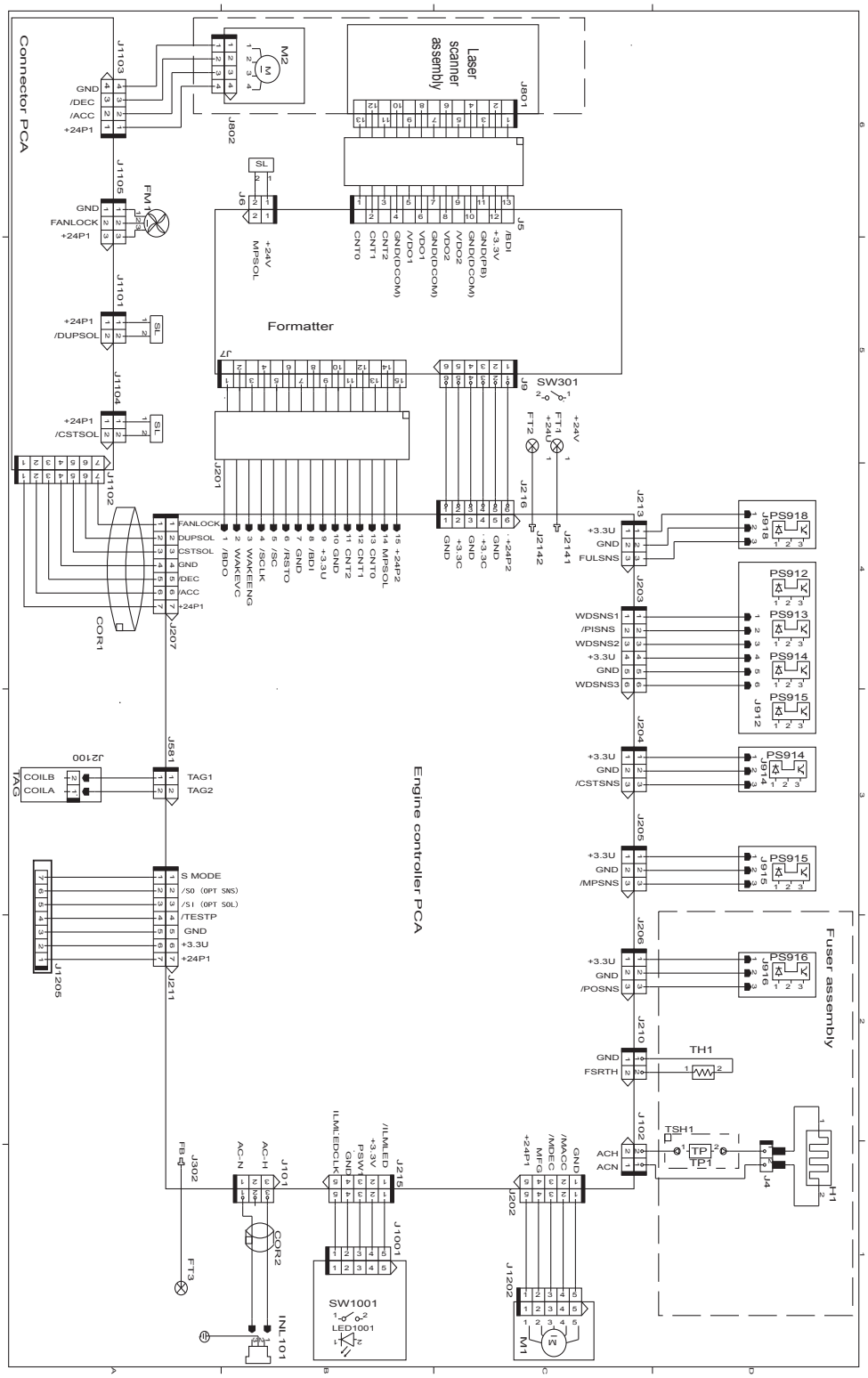


Figure 2-6 Circuit diagram — touchscreen control panel models (2 of 2)

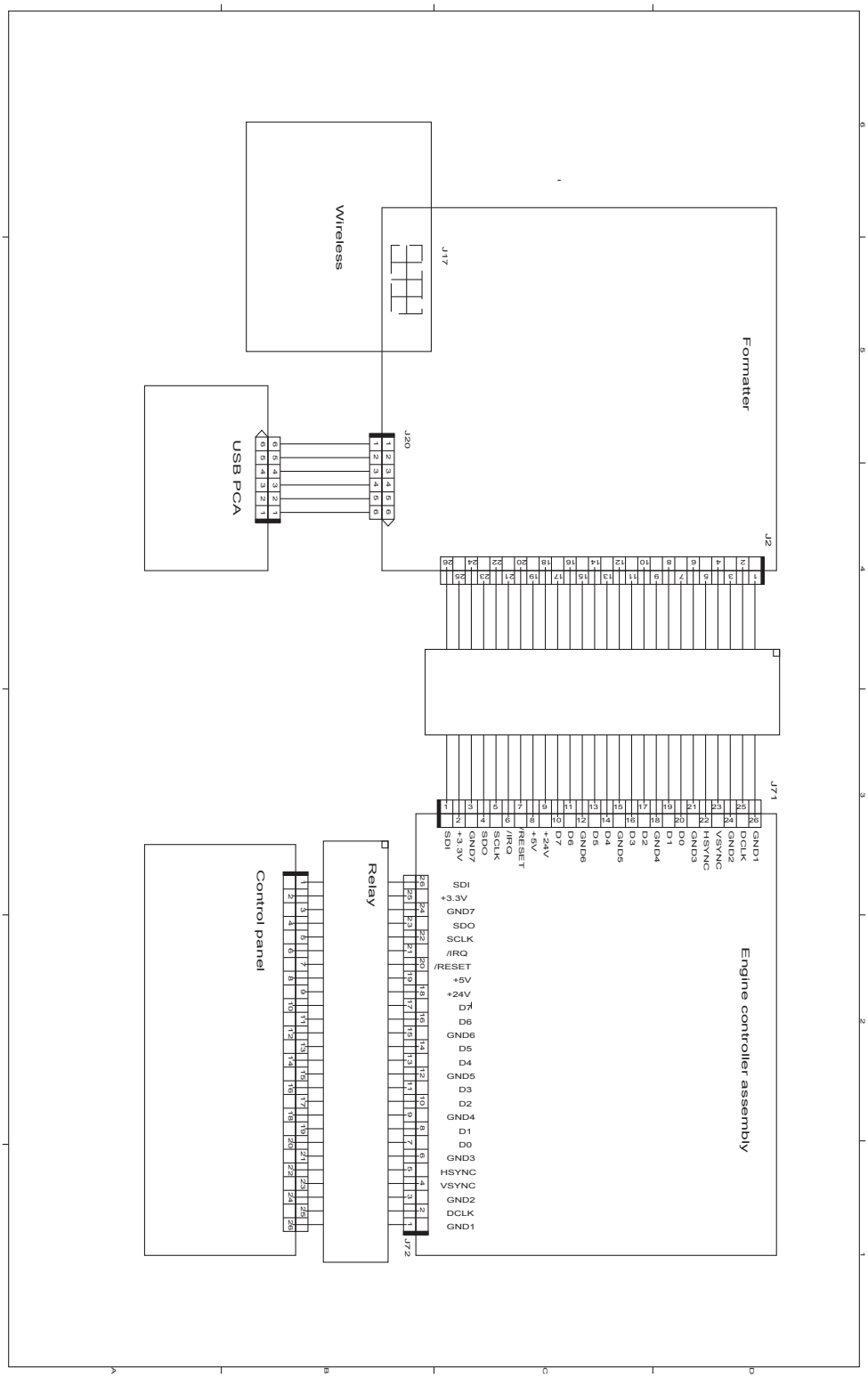
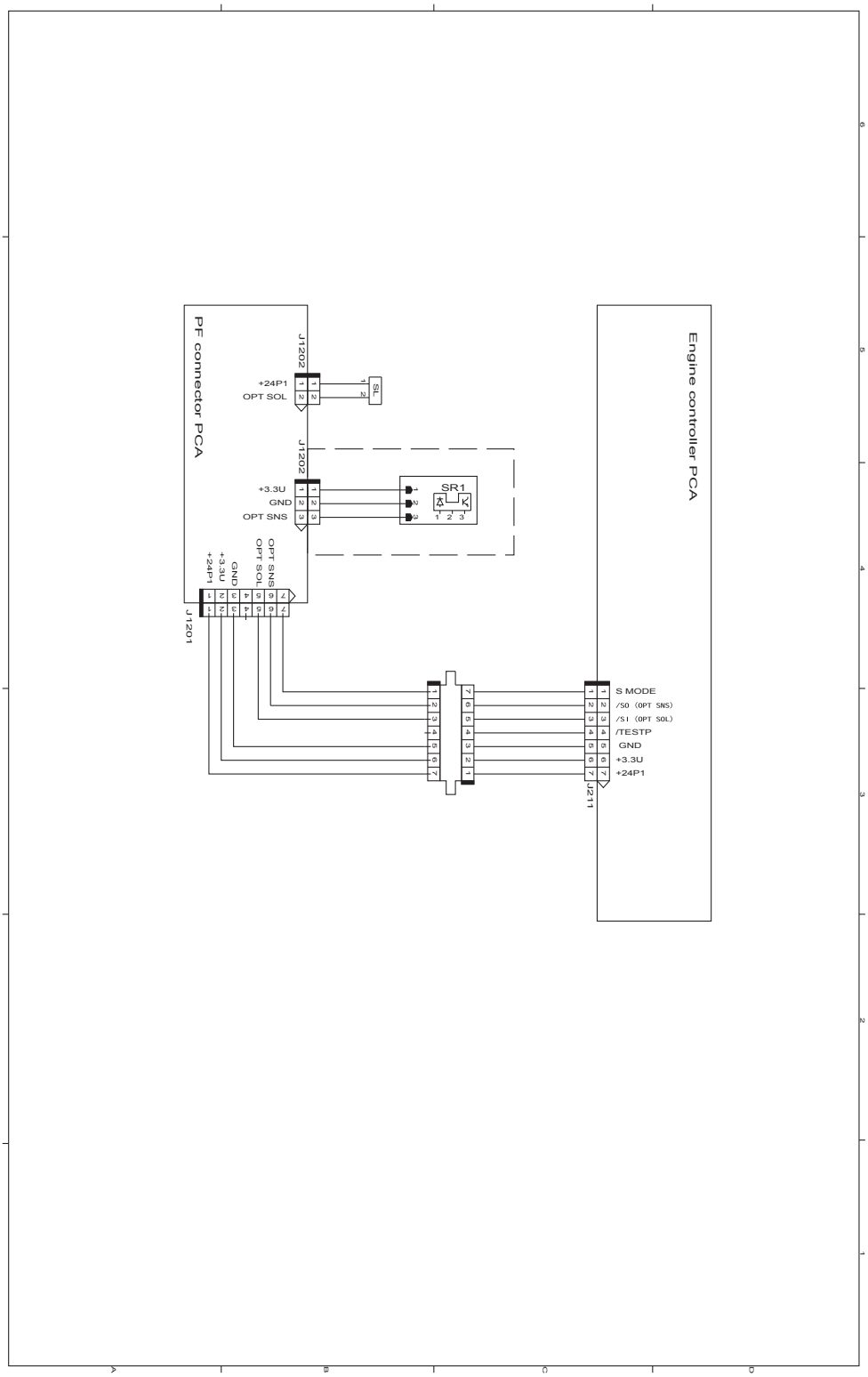


Figure 2-7 Circuit diagram — optional Tray 3



Use HP Device Toolbox (Windows)

Use the HP Device Toolbox for Windows to view or change product settings from your computer. This tool opens the HP Embedded Web Server for the product.

NOTE: This tool is available only if you performed a full installation when you installed the product. The HP Embedded Web Server, however, is still available by opening a Web browser and entering the product IP address in the browser address box.

1. Click the **Start** button, and then click the **Programs** item.
2. Click your HP product group, and then click the **HP Device Toolbox** item.

Tab or section	Description
Home tab Provides product, status, and configuration information.	• **Device Status**: Shows the product status and shows the approximate percent life remaining of HP supplies. • **Supplies Status**: Shows the approximate percent life remaining of HP supplies. Actual supply life remaining can vary. Consider having a replacement supply available to install when print quality is no longer acceptable. The supply does not need to be replaced unless the print quality is no longer acceptable. • **Device Configuration**: Shows the information found on the product configuration page. • **Network Summary**: Shows the information found on the product network configuration page. • **Reports**: Allows you to print the configuration and supplies status pages that the product generates. • **Event Log**: Shows a list of all product events and errors.
System tab Provides the ability to configure the product from your computer.	• **Device Information**: Provides basic product and company information. • **Paper Setup**: Allows you to change the paper-handling defaults for the product. • **Print Quality**: Allows you to change the print quality defaults for the product, including calibration settings. • **Paper Types**: Allows you to configure print modes that correspond to the paper types that the product accepts. • **System Setup**: Allows you to change the system defaults for the product. • **Service**: Allows you to start the cleaning procedure on the product. • **Product Security**: Allows you to set or change the product password. • **Save and Restore**: Save the current settings for the product to a file on the computer. Use this file to load the same settings onto another product or to restore these settings to this product at a later time. **NOTE:** The **System** tab can be password-protected. If this product is on a network, always consult with the administrator before changing settings on this tab.

Tab or section	Description
Print tab Provides the ability to change default print settings from your computer.	• **Printing**: Change the default product print settings, such as number of copies and paper orientation. These are the same options that are available on the control panel. • **PCL5c**: View and change the PCL5c settings. • **PostScript**: Turn off or on the **Print PS Errors** feature.
Networking tab (network models only) Provides the ability to change network settings from your computer.	Network administrators can use this tab to control network-related settings for the product when it is connected to an IP-based network. It also allows the network administrator to set up wireless direct functionality. This tab does not appear if the product is directly connected to a computer.
HP Web Services tab	Use this tab to set up and use various Web tools with the product.
HP Smart Install tab	Use this tab to download and install the print driver.

Internal print-quality test pages

Clean the paper path

During the printing process, paper, toner, and dust particles can accumulate inside the product. Over time, this buildup can cause print-quality problems such as toner specks or smearing. This product has a cleaning mode that can correct and prevent these types of problems.

Clean the paper path (LCD control panel)

1. On the product control panel, press the OK button to open the menus.
2. Open the following menus:
   - **Service**
   - **Cleaning Page**
3. Load plain paper in Tray 1, and then press the OK button to start the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Clean the paper path (touchscreen control panel)

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the **Service** menu.
3. Touch the **Cleaning Page** button.
4. Load plain letter or A4 paper when you are prompted.
5. Touch the OK button to begin the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Print the configuration page

The configuration page lists current product settings and properties. This page also contains a status log report. To print a configuration page, complete one of the following procedures.

Print the configuration page from an LCD control panel

1. On the product control panel, press the OK button to open the menus.
2. Use the arrow buttons to select the **Reports** menu, and then press the OK button.
3. Use the arrow buttons to select the **Configuration Report** item, and then press the OK button to print the report.

Print the configuration page from a touchscreen control panel

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the **Reports** menu.
3. Touch the **Configuration Report** button to print the report.

Print-quality troubleshooting tools

Repetitive image defect ruler

Defects on product rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance between defects that recur on a page. Use the following table or the repetitive-defect ruler to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller remains dirty after cleaning or if it is damaged, replace the part that is indicated in the following table.

CAUTION: Do not use solvents or oils to clean rollers. Instead, rub the roller with lint-free paper. If dirt is difficult to remove, rub the roller with lint-free paper that has been dampened with water.

NOTE: The following table replaces the graphical repetitive defect ruler. You can make your own ruler by using these measurements. For the most accurate results, use a metric ruler.

Table 2-4 Repetitive defects

Component	Distance between defects
Primary charging roller	38 mm (1.5 in)
Transfer roller	39 mm (1.54 in)
Developer roller	42 mm (1.65 in)
Registration roller	43 mm (1.69 in)
Fuser film	57 mm (2.24 in)
Pressure roller	63 mm (2.48 in)
Photosensitive drum	75 mm (2.95 in)

Control panel menus

- HP Web Services menu
- Reports menu
- Quick Forms menu
- USB Flash Drive menu
- System Setup menu
- Service menu
- Network Setup menu

HP Web Services menu

Use the **HP Web Services** menu to set up the HP Web Services features.

Menu item	Description
Print Information Sheet	Prints a report that instructs the user how to set up the HP Web Services features.
Display Address	Displays the product email address.
Turn ePrint On/Off	Enables or disables the product HP ePrint functionality.
Turn Apps On/Off	Enables or disables the product HP Web Services applications.
Enable Web Services	Enables the HP Web Services features.
Remove Services	Removes the HP Web Services features from the product.
Clear Apps History	Deletes the stored history of the product HP Web Services applications.
Proxy Settings	Allows you to enter proxy server information for the product internet connection.

Reports menu

Use the **Reports** menu to print reports that provide information about the product.

Menu item	Description
Demo Page	Prints a sample page that demonstrates print quality.
Menu Structure	Prints a map of the control panel-menu layout. The active settings for each menu are listed.
Configuration Report	Prints a list of all the product settings. Includes network information when the product is connected to a network.

Menu item	Description
Supplies Status	Prints the status for each toner cartridge, including the following information: • Estimated percentage of cartridge life remaining • Approximate pages remaining • Part numbers for HP toner cartridge • Number of pages printed • Information about ordering new HP toner cartridges and recycling used HP toner cartridges
Network Summary	Prints a list of all product network settings
Usage Page	Prints a page that lists PCL pages, PCL 6 pages, PS pages, pages that were jammed or mispicked in the product, and reports the page count
PCL Font List	Prints a list of all the PCL fonts that are installed
PS Font List	Prints a list of all the PostScript (PS) fonts that are installed
PCL6 Font List	Prints a list of all the PCL6 fonts that are installed
Service Page	Provides information on supported paper types, copy settings, and other miscellaneous settings that are not on the configuration page

Quick Forms menu

Menu item	Sub-menu item	Description
Notebook Paper	**Narrow Rule**	Prints pages that have preprinted lines
	Wide Rule	
	Child Rule	
Graph Paper	**1/8 inch**	Prints pages that have preprinted graph lines
	5 mm	
Checklist	**1 Column**	Prints pages that have preprinted lines with check boxes
	2 Column	
Music Paper	**Portrait**	Prints pages that have preprinted lines for writing music
	Landscape	

USB Flash Drive menu

Print Documents	Prints documents stored on the USB drive. Use the arrow buttons to scroll through the documents. Touch the names of documents that you want to print. Touch the summary screen to change settings such as the number of copies, the paper size, or the paper type. Touch the **Print** button when you are ready to print the documents.
Easy Photo Print	Prints photo files directly from the product. **NOTE:** This menu item is available for LCD control panel models only.
Thumbnail Sheet(s)	Prints a page or pages of 30 "thumbnail" graphic images. **NOTE:** This menu item is available for LCD control panel models only.
View and Print Photos	Previews photos on the USB drive. Use the arrow buttons to scroll through the photos. Touch the preview image for each photo that you want to print. You can adjust the settings, and you can save the changes as the new default settings. When you are ready to print the photos, touch the **Print** button.
Scan to USB Drive	Scans a document and stores it as a .PDF document or .JPEG image on the USB flash drive.

System Setup menu

In the following table, items that have asterisks (*) indicate the factory default setting.

Menu item	Sub-menu item	Sub-menu item	Description
Language			Select the language for the control panel display messages and the product reports.
Paper Setup	**Def. Paper Size**	**Letter** **A4** **Legal**	Sets the size for printing internal reports or any print job that does not specify a size. **NOTE:** The default setting is determined by the choice of location during the initial product setup.
	Def. Paper Type	A list of available paper types appears.	Select the paper type for printing internal reports or any print job that does not specify a type.
	Tray 1	**Paper Type** **Paper Size**	Select the default size and type for Tray 1 from the list of available sizes and types.

Menu item	Sub-menu item	Sub-menu item		Description
	Tray 2	**Paper Type** **Paper Size**		Select the default size and type for Tray 2 from the list of available sizes and types.
	Paper Out Action	**Wait Forever*** **Cancel** **Override**		Select how the product should react when a print job requires a size or type that is not available or when a specified tray is empty. Select the **Wait Forever** option to make the product wait until you load the correct paper and press the OK button. This is the default setting. Select the **Override** option to print on a different size or type after a specified delay. Select the **Cancel** option to automatically cancel the print job after a specified delay. If you select either the **Override** or **Cancel** options, the control panel prompts you to specify the number of seconds to delay. Use the arrow buttons to increase (up to 3600 seconds) or decrease the time.
Energy Settings	**Sleep Delay**	**Off** **1 Minute** **15 Minutes*** **30 Minutes** **1 Hour** **2 Hours**		Sets how long the product remains idle before it enters sleep mode. The product automatically exits sleep mode when you send a print job or press a control panel button.
	Auto Power Down	**Auto Power Down Delay**	**Never** **30 Minutes** **1 Hour** **2 Hours** **4 Hours** **8 Hours** **24 Hours**	Sets the period of time that must elapse before the product Auto Power Down feature activates.

Menu item	Sub-menu item	Sub-menu item		Description
		Wake Events	**USB Job** **LAN Job** **Wireless Job** (wireless models only) **Button Press** **USB Drive Insert**	Enables or disables certain product events (like when a control panel button is pressed) that will cause the product to revert from Auto Power Down mode to Ready status.
Print Density	A range of 1 to 5.			Select the print density level. The default setting is 3
Supply Settings	**Black Cartridge**	**Very Low Setting**	**Stop** **Prompt*** **Continue**	Set how the product behaves when the black toner cartridge reaches the very low threshold. • **Stop**: The product stops printing until you replace the toner cartridge. • **Prompt**: The product stops printing and prompts you to replace the toner cartridge. You can acknowledge the prompt and continue printing. • **Continue**: The product alerts you that the toner cartridge is very low, but it continues printing.
		Low Threshold	A percentage range of 1 to 100.	Set the percentage of estimated life remaining at which the product alerts you that the toner cartridge is low.
Administration	**Product Security** (touchscreen control panel models only)			Enable product security. If turned on, the product prompts you to set a password. After it is set, the password will be needed to change product settings.
	USB Flash Drive	**On*** **Off**		Enable or disable the walkup USB port.
Display Contrast	**Medium*** **Darker** **Darkest** **Lightest** **Lighter**			Select the level of contrast for the display.

Menu item	Sub-menu item	Sub-menu item	Description
Courier Font	**Regular*** **Dark**		Selects a version of the Courier font..
Quiet Mode			Enable or Disable the product Quiet Mode.

Service menu

Use this menu to restore default settings, clean the product, and activate special modes that affect print output. Items that have asterisks (*) indicate the factory default setting.

Menu item	Sub-menu item	Sub-menu item	Description
Cleaning Page			Use this option to clean the product if you see toner specks or other marks on the printed output. The cleaning process removes dust and excess toner from the paper path. When you select this item, the product prompts you to load plain paper in Tray 1 and then press the OK button to start the cleaning process. Wait until the process is complete. Discard the page that prints.
USB Speed	**High*** **Full**		Sets the USB speed to **High** or **Full**. For the product to actually operate at high speed, it must have high speed enabled and be connected to an EHCI host controller that is also operating at high speed. This menu item also does not reflect the current operating speed of the product.
Less Paper Curl	**On** **Off***		If printed pages are consistently curled, use this option to set the product to a mode that reduces curl.
Archive Print	**On** **Off***		If you are printing pages that will be stored for a long time, use this option to set the product to a mode that reduces toner smearing and dusting.
Firmware Date			Displays the current firmware datecode.
Restore Defaults			Sets all customized copy settings to the factory default values.

Menu item	Sub-menu item	Sub-menu item	Description
Signature Check	**Cancel if Invalid*** **Prompt if Invalid**		Configures how the product proceeds when a firmware upgrade file does not have a valid signature.
HP Smart Install	**On*** **Off**		Enables or disables the HP Smart Install functionality.
LaserJet Update	**Check For Updates Now**		Prompts the product to search for a newer firmware upgrade file and then upload it.
	Manage Updates	**Allow Downgrade**	**Yes***: Allows the firmware upgrade functionality to upload an older firmware version. **No**: Prevents the product from loading older firmware files.
		Check Automatically	**On***: Allows the product to automatically search for new firmware updates. **Off**: Prevents the product from loading new firmware update files.
		Prompt Before Install	**Install Automatically**: Allows the product to automatically load a firmware update file. **Always Prompt***: Causes the product to display a prompt at the control panel before the product can load a firmware update file.
		Allow Updates	**Yes***: Allows the product to load firmware update files. **No**: Prevents the product from loading firmware update files.

Network Setup menu

Use this menu to establish network configuration settings.

Menu item	Sub-menu item	Description
Wireless Menu (wireless products only)	**Wireless Direct Settings**	
	Wireless Setup Wizard	
	Wi-Fi Protected Setup	If your wireless router supports this feature, use this method to set up the product on a wireless network. This is the simplest method.
	Run Wireless Test	Tests the wireless network and prints a report with the results.
	Turn Wireless On/Off	Enable or disable the wireless network feature.
TCP/IP Config	**Automatic*** **Manual**	Select **Automatic** to automatically configure all the TCP/IP settings. Select **Manual** to manually configure the IP address, subnet mask, and default gateway.
IPv4 Config Method	**DHCP** **BOOTP** **Auto IP** **Manual**	Set the IPv4 configuration method.
Card Sharing	**On*** **Off**	Enable or disable file sharing of a memory card that has been inserted into the product walkup USB port.
Auto Crossover	**On*** **Off**	This item is used when you are connecting the product directly to a personal computer using an Ethernet cable (you might have to set this to **On** or **Off** depending on the computer being used).
Network Services	**IPv4** **IPv6**	This item is used by the network administrator to limit the network services available on this product. **On** **Off** The default setting is **On**.
Show IP Address	**No*** **Yes**	**No**: The product IP address will not appear on the control panel display. **Yes**: The product IP address will appear on the control panel display.

Menu item	Sub-menu item	Description
Link Speed	**Automatic** (Default) **10T Full** **10T Half** **100TX Full** **100TX Half**	Sets the link speed manually if needed. After setting the link speed, the product automatically restarts.
Security	**Product Security** (touchscreen control panel models only)	Enable product security. If turned on, the product prompts you to set a password. After it is set, the password will be needed to change product settings.
	HTTPS Enforcement	Enable or disable the **HTTPS Enforcement** setting. The default setting is **On**.
	Firewall	Enable, disable, or reset the product firewall.
	Access Control List	Enable, disable, or reset the network access control list.
	802.1x (wireless models only)	Enable or disable the 802.1x wireless authentication protocol.
	Reset All Security	Reset the security settings to the factory-set default values.
Restore Defaults		Press the OK button to restore the network configuration settings to the default values.
USB Flash Drive	**On** **Off**	Enable or disable the walkup USB port.

Interpret control panel messages

Control panel message types

The control panel messages indicate the current product status or situations that might require action.

Alert and warning messages appear temporarily and might require you to acknowledge the message by pressing the OK button to resume or by pressing the Cancel ✕ button to cancel the job. With certain warnings, the job might not complete or the print quality might be affected. If the alert or warning message is related to printing and the auto-continue feature is on, the product will attempt to resume the printing job after the warning has appeared for 10 seconds without acknowledgement.

Critical error messages can indicate some kind of failure. Turning off and then turning on the power might fix the problem. If a critical error persists, the product might require service.

Control panel messages

10.x000 Supply Error

Description

The toner cartridge memory chip cannot be read or is missing.

- 10.0000 = memory chip error
- 10.1000 = memory chip is missing

Recommended action

Reinstall the toner cartridge.

Turn the product off and then on.

If the message persists, replace the toner cartridge.

49 Error Turn off then on

Description

The product experienced an internal error.

Recommended action

Turn the product off, wait at least 30 seconds, and then turn the product on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

50.x Fuser Error Turn off then on

Description

The product has experienced an error with the fuser.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

Turn off the product, wait at least 25 minutes, and then turn on the product.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

51.XX Error Turn off then on

Description

The product has experienced an internal hardware error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product on.

If the message persists, contact HP support.

54.XX Error Turn off then on

Description

The product has experienced an error with one of the internal sensors.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

55.X Error Turn off then on

Description

The product has experienced an internal error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

57 Fan error Turn off then on

Description

The product has experienced a problem with its internal fan.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

59.X Error Turn off then on

Description

The product has experienced a problem with one of the motors.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

79 Error Turn off then on

Description

The product has experienced an internal firmware error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

79 Service error Turn off then on

Description

An incompatible DIMM is installed.

Recommended action

1. Turn the product power off.
2. Install a DIMM that the product supports.
3. Turn the product on.

If the message persists, contact HP support.

Black cartridge low

Description

The toner cartridge is nearing the end of its useful life.

Recommended action

Printing can continue, but consider having a replacement toner cartridge available.

Black cartridge very low

Description

The toner cartridge is at the end of its useful life. A customer configurable option on this product is "Prompt to Remind Me in 100 pages, 200 pages, 300 pages, 400 pages, or never." This option is provided as a customer convenience and is not an indication these pages will have acceptable print quality.

Recommended action

To ensure optimal print quality, HP recommends replacing the toner cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary.

Once an HP toner cartridge has reached very low, HP's Premium Protection Warranty on that toner cartridge has ended. All print defects or cartridge failures incurred when an HP toner cartridge is used in continue at very low mode will not be considered to be defects in materials or workmanship in the toner cartridge under the HP Print Cartridge Warranty Statement.

Device error Press [OK]

Description

An internal error occurred.

Recommended action

Press the OK button to resume the job.

Door open

Description

The product front door is open.

Recommended action

Close the door.

Genuine HP supply installed

Description

A genuine HP supply was installed.

Recommended action

No action necessary.

Install black cartridge

Description

The toner cartridge is either not installed or not correctly installed in the product.

Recommended action

Install the toner cartridge.

Invalid driver Press [OK]

Description

You are using an incorrect print driver.

Recommended action

Select the correct print driver.

Jam in <location>

Description

The product has detected a jam.

Recommended action

Clear the jam from the location indicated. The job should continue to print. If it does not, try reprinting the job.

If the message persists, contact HP support.

Jam in Tray <X> Clear jam and then Press [OK]

Description

The product has detected a jam.

Recommended action

Clear the jam from the location indicated, and then press OK.

If the message persists, contact HP support.

Load tray 1 <TYPE>, <SIZE>

Description

No trays are configured for the paper type and size that the print job is requesting.

Recommended action

Load the correct paper into Tray 1, or press OK to use paper in a different tray.

Load tray 1 PLAIN <SIZE> Cleaning Mode

Description

The product is ready to process the cleaning operation.

Recommended action

Load Tray 1 with plain paper in the size indicated, and then press the OK button.

Load tray <X> Press [OK] for available media

Description

The tray is empty.

Recommended action

Load paper into the tray to continue printing. Press the OK button to select a different tray.

Load tray <X> <TYPE> <SIZE>

Description

A tray is configured for the paper type and size that the print job is requesting, but that tray is empty.

Recommended action

Load the correct paper into the tray, or press the OK button to use paper in a different tray.

Manual Duplex Load tray <X> Press [OK]

Description

The first side of a manual duplex job has printed, and the page needs to be loaded to process the second side.

Recommended action

Load the page in the indicated tray with the side to be printed face up, and the top of the page away from you, and then press the OK button.

Manual feed <SIZE>, <TYPE> Press [OK] for available media

Description

The product is set for manual feed mode.

Recommended action

Press the OK button to clear the message *or* load the correct paper into Tray 1.

Memory is low Press [OK]

Description

The product memory is almost full.

Recommended action

Press the OK button to finish the job, or press the Cancel ✕ button to cancel the job.

Break the job into smaller jobs that contain fewer pages.

Misprint Press [OK]

Description

Paper has been delayed as it moves through the product.

Recommended action

Press the OK button to clear the message.

To avoid this problem, try the following solutions:

- Adjust the paper guides in the tray. Make sure the front paper guide is pushing the paper against the back edge of the tray.
- Use paper that meets HP specifications. Store paper unopened in its original packaging.
- Use the product in an area that meets the environmental specifications for this product.

Print failure, press OK. If error repeats, turn off then on.

Description

The product cannot process the page.

Recommended action

Press the OK button to continue printing the job, but output might be affected.

If the error persists, turn the power off and then on. Resend the print job.

Rear door open

Description

The product rear door is open.

Recommended action

Close the door.

Remove shipping material from toner cartridge

Description

A toner cartridge shipping lock is installed.

Recommended action

Pull the orange tab to remove the shipping lock from the cartridge.

Replace black cartridge

Description

The toner cartridge is at the end of its useful like, and the product is customer-configured to stop printing when it reaches the very low state.

Recommended action

To ensure optimal print quality, HP recommends replacing the toner cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary. Once an HP toner cartridge has reached very low, HP's Premium Protection Warranty on that toner cartridge has ended. All print defects or cartridge failures incurred when an HP toner cartridge is used in continue at very low mode will not be considered to be defects in materials or workmanship in the toner cartridge under the HP Print Cartridge Warranty Statement.

Supplies low

Description

A toner cartridge is low.

Recommended action

Printing will continue until a Very Low message displays. Consider having a replacement toner cartridge available.

Unexpected size in tray <X> Load <size> Press [OK]

Description

The product has detected paper in the tray that does not match the configuration for the tray.

Recommended action

Load the correct paper into the tray, or configure the tray for the size that you have loaded.

Unsupported black cartridge Press [OK] to continue

Description

The product has detected an installed toner cartridge that was not made by HP.

Recommended action

Press the OK button to continue printing.

If you believe you purchased an HP supply, go to www.hp.com/go/anticounterfeit. Service or repairs that are required as a result of using unsupported supplies are not covered under HP warranty.

Used black cartridge is installed Press [OK] to continue

Description

You are using a toner cartridge that reached the default low threshold while it was installed in another product.

Recommended action

Press the OK button to clear the message. Printing can continue, but consider having a replacement toner cartridge available.

Event-log messages

Print the event log

Print the event log (LCD control panel)

1. Make sure the product is in the ready state.
2. At the product control panel, press the OK button to open the menus.
3. Press the left arrow button, and then quickly press the Cancel ✕ button.
4. The product returns to the Ready state. Press the OK button to reopen the menus.
5. Select the **2ndary Service** menu, and then press the OK button.

6. Select the **Service Reports** menu, and then press the OK button.
7. Select the **Error Report** menu, and then press the OK button.

Print the event log (touchscreen control panel)

1. Make sure the product is in the ready state.
2. From the Home screen on the product control panel, touch the Setup button.
3. Touch the left arrow button, and then quickly touch the Cancel button.
4. The product returns to the Ready state. touch the Setup button to reopen the menus.
5. Touch the **2ndary Service** menu.
6. Touch the **Service Reports** menu.
7. Touch the **Error Report** item.

Show an event log

You can use HP Device Toolbox to view the event log from a computer.

NOTE: This tool is available only if you performed a full installation when you installed the product.

1. Click the **Start** button, and then click the **Programs** item.
2. Click your HP product group, and then click the HP Device Toolbox item.
3. Click the **Home** tab, and then click the **Event Log** item. The event log shows a list of all product events and errors.

Event log messages

The following table contains any event log codes for this product that correspond to a control-panel error message. To resolve these events, consult the control panel error message.

Table 2-5 Event-log messages

Event code	Description
13.0000	Paper jam
20.0000	Memory out
21.0000	Page misfeed or mispick
41.2000	Beam detect malfunction
41.3000	Unexpected size
50.0000	Fuser error
50.1000	Low fuser temperature error
50.3000	High fuser temperature error

Table 2-5 Event-log messages (continued)

Event code	Description
50.4000	Fuser drive circuit error
51.0000	Beam detect or laser error
52.0000	Engine laser scanner error
55.3000	Engine-formatter communication error
55.4000	Engine communication timeout error
57.0000	Fan motor error
57.0600	Fan motor error

Some product events do not produce a message that displays on the control panel. Instead, they are only recorded in the event log.

Table 2-6 Event-log-only messages

Event code	Description	Solution
50.2000	Slow fuser error	
50.7000	Fuser open error	
	Low subthermistor fuser error	
	High subthermistor fuser error	
51.2000	Black scanner laser error (inline devices only)	
54.0100	Environmental sensor error	Verify that the DC controller connectors are firmly connected. If the error persists, replace the temperature/humidity sensor. If the error persists, replace the DC controller.
54.0600	Density sensor error	Verify that the cables between the DC controller is firmly connected.
54.1100	Black density out of range	If the error persists, replace the color misregistration sensor.
54.1200	Black density measurement abnormality	If the error persists, replace the DC controller.
54.1400	Color plane registration sensor error (inline devices only)	1. Turn off the power by using the power switch, and then wait at least 30 seconds. 2. Turn on the power and wait for the product to initialize. If the error persists, verify that the cables between the color misregistration sensor and the DC controller are firmly connected. If the error persists, replace the color misregistration sensor. If the error persists, replace the toner cartridge tray. If the error persists, replace the DC controller.

Table 2-6 Event-log-only messages (continued)

Event code	Description	Solution
54.1501	Cyan CPR pattern cannot be read	1. Turn off the power by using the power switch, and then wait at least 30 seconds. 2. Turn on the power and wait for the product to initialize. If the error persists, verify that the cables between the color misregistration sensor and the DC controller are firmly connected. If the error persists, replace the color misregistration sensor. If the error persists, replace the toner cartridge tray. If the error persists, replace the DC controller.
54.1502	Magenta CPR pattern cannot be read	
54.1503	Yellow CPR pattern cannot be read	
54.1599	Black CPR pattern cannot be read	
54.1800	Black toner level sensor error	1. Turn off the power by using the power switch, and then wait at least 30 seconds. 2. Turn on the power and wait for the product to initialize. If the error persists, replace the DC controller.
54.2100	Beam detect (BD) error	If the error persists, replace the DC controller. If the error persists, replace the product.
54.2500	Top-of-page sensor error	Verify that the DC controller connectors are firmly connected. If the error persists, replace the DC controller.

Clear jams

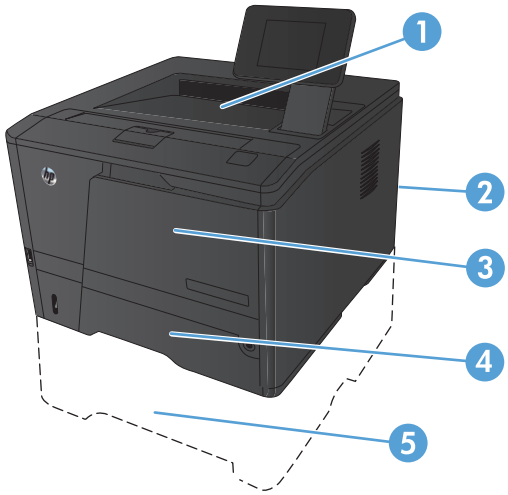
Common causes of jams

To reduce the number of paper jams, try these solutions.

1. Use only paper that meets HP specifications for this product.
2. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
3. Use paper that has not previously been printed or copied on.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides so they are touching the paper stack without bending it.
6. If you are printing on heavy, embossed, or perforated paper, use the manual feed feature and feed sheets one at a time.

Jam locations

Jams can occur in these locations:



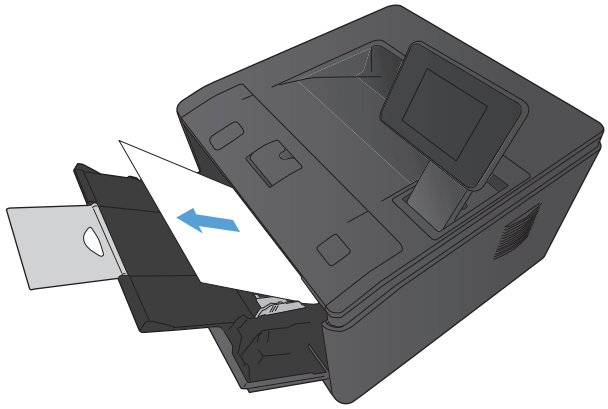
1	Output bin
2	Rear door
3	Tray 1
4	Tray 2
5	Optional Tray 3

Loose toner might remain in the product after a jam. This problem typically resolves itself after a few sheets have been printed.

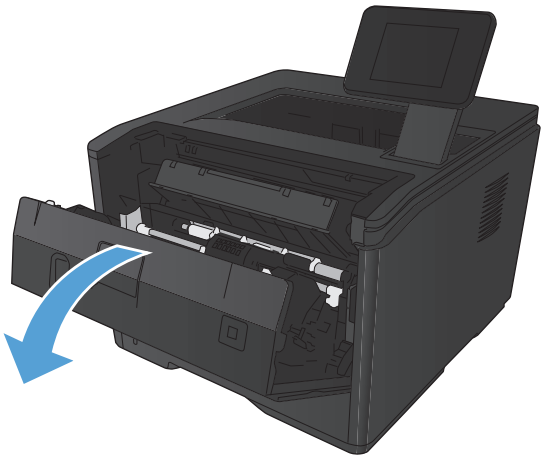
Clear a jam in Tray 1

NOTE: If the sheet tears, remove all fragments before resuming printing.

1. If you can see the jammed sheet, remove the jammed sheet by pulling it straight out.



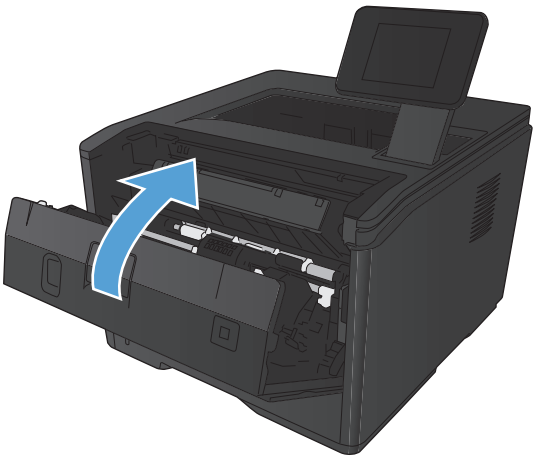
2. If you cannot see the jammed sheet, open the print cartridge door, and then remove the print cartridge.



3. Remove the jammed sheet by pulling it straight out.

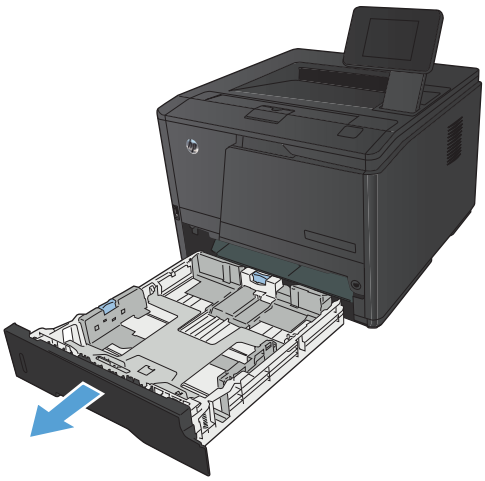
   CAUTION: Do not pull up on the jammed sheet. Be sure to pull it straight out.

4. Reinstall the print cartridge, and then close the print cartridge door.



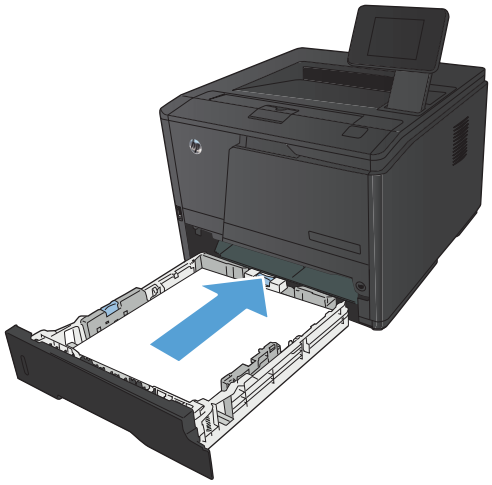
Clear a jam in Tray 2

1. Remove the tray from the product.



2. Remove the jammed sheet by pulling it straight out.

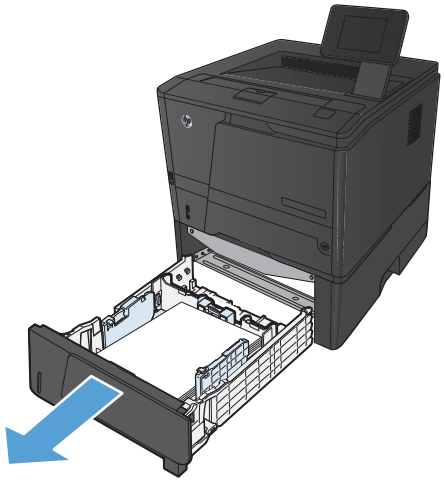
3. Replace the tray.



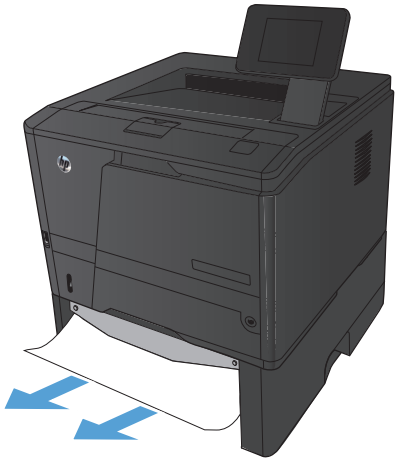
4. Press the OK button to continue printing.

Clear a jam in optional Tray 3

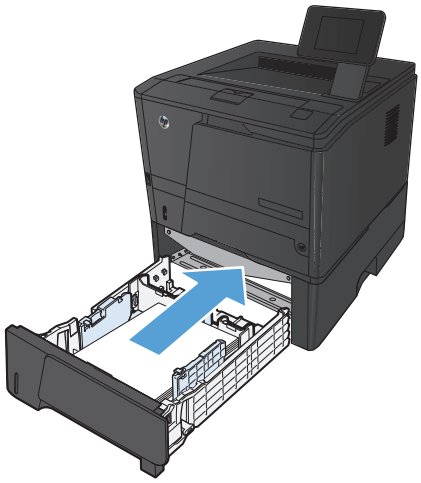
1. Remove the tray from the product.



2. Remove the jammed sheet by pulling it straight out.



3. Replace the tray.



4. Press the OK button to continue printing.

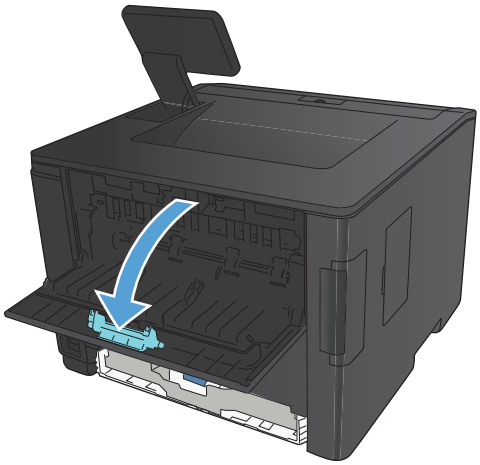
Clear jams from the output bin

CAUTION: Do not use sharp objects, such as tweezers or needle-nose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

1. With both hands, grasp the paper, and carefully pull it free from the product.

Clear a jam in the duplexer area

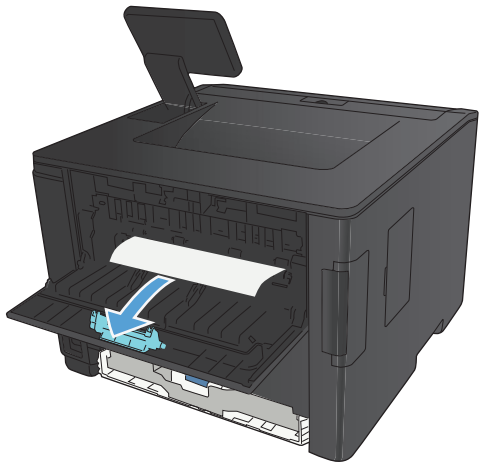
1. Open the rear door.



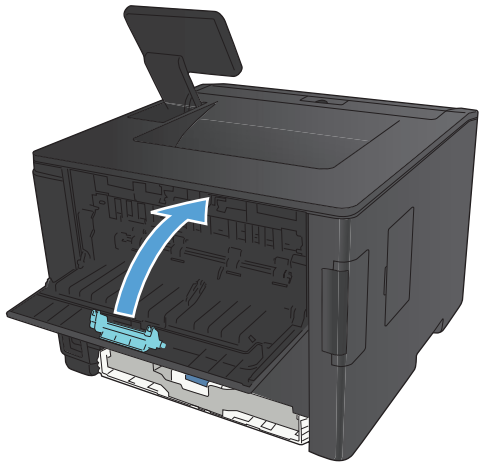
2. Remove any jammed sheets.

   NOTE: If the sheet tears, remove all fragments before resuming printing.

   CAUTION: Wait until the fuser area has cooled before clearing the jam.

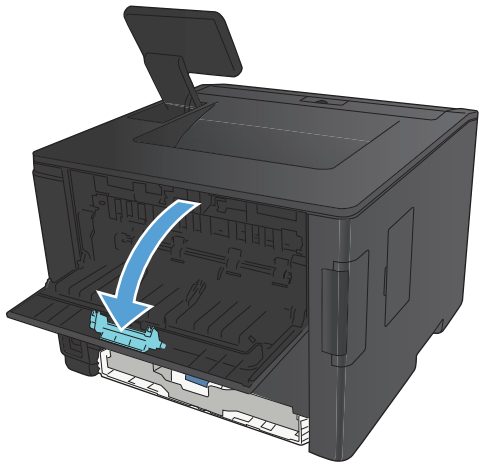


3. Close the rear door.



Clear a jam in the fuser area

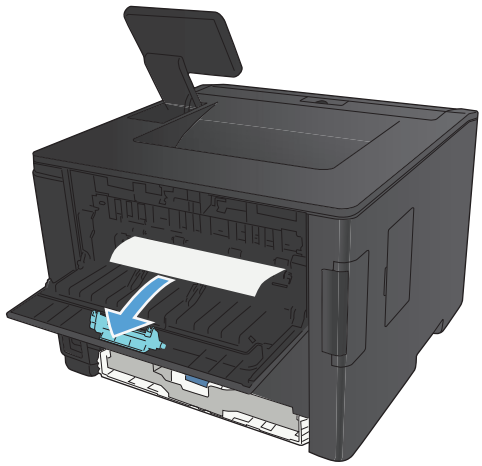
1. Open the rear door.



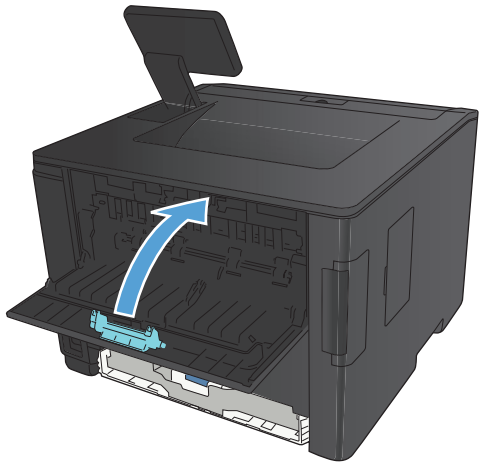
2. Remove any jammed sheets.

   NOTE: If the sheet tears, remove all fragments before resuming printing.

   CAUTION: Wait until the fuser area has cooled before clearing the jam.



3. Close the rear door.



Solve paper-handling problems

The product picks up multiple sheets of paper

If the product picks up multiple sheets of paper from the tray, try these solutions.

1. Remove the stack of paper from the tray and flex it, rotate it 180 degrees, and flip it over. *Do not fan the paper.* Return the stack of paper to the tray.
2. Use only paper that meets HP specifications for this product.
3. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Align the guides with the paper-size markings in the bottom of the tray.

The product does not pick up paper

If the product does not pick up paper from the tray, try these solutions.

1. Open the product and remove any jammed sheets of paper.
2. Load the tray with the correct size of paper for your job.
3. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Align the guides with the paper-size markings in the bottom of the tray.
4. Check the product control panel to see if the product is waiting for you to acknowledge a prompt to feed the paper manually. Load paper, and continue.

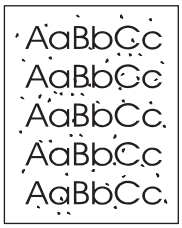
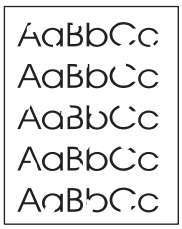
Solve image quality problems

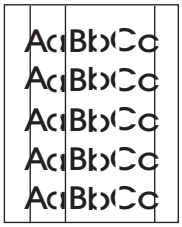
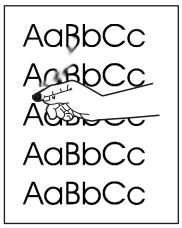
You can prevent most print-quality problems by following these guidelines.

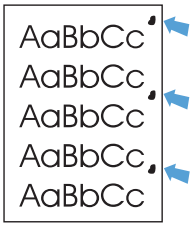
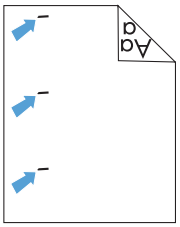
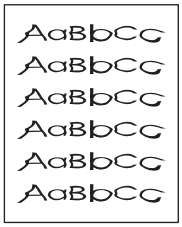
- Print quality examples

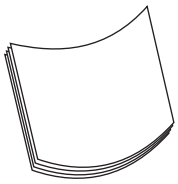
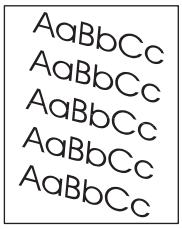
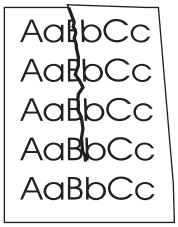
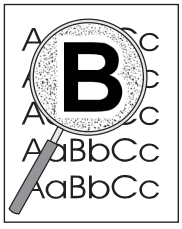
Print quality examples

The following examples depict Letter-size paper that has passed through the product short-edge first. These examples illustrate problems that would affect all the pages that you print, whether you print in color or in black only. The topics that follow list the typical cause and solution for each of these examples.

Problem	Cause	Solution
Print is light or faded. 	The media might not meet HP specifications.	Use media that meets HP specifications.
	The toner cartridge might be defective.	Print the supplies status page to check the remaining toner cartridge life. See the user guide. Replace the toner cartridge.
	The product is set to override the **Replace black cartridge** message and to continue printing.	Replace the toner cartridge.
	The print density setting might have been changed.	Set the print density setting to **0**.
Toner specks appear. 	The media might not meet HP specifications.	Use only media that meets HP specifications. See the complete version of the English service manual.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 94.
	The toner cartridge might be leaking.	Check the cartridge for leaks.
Dropouts appear. 	A single sheet of print media might be defective.	Try reprinting the job.
	The moisture content of the paper is uneven or the paper has moist spots on its surface.	Try different paper, such as high-quality paper that is intended for laser printers.
	The media is flawed. The media manufacturing processes can cause some areas to reject toner.	Try different paper, such as high-quality paper that is intended for laser printers.

Problem	Cause	Solution
Vertical streaks or bands appear on the page. 	The toner cartridge might be defective.	Print the supplies status page to check the remaining life. See the user guide. Use HP Device Toolbox. Replace the toner cartridge.
	The product is set to override the **Replace black cartridge** message and to continue printing.	Replace the toner cartridge.
The amount of background toner shading becomes unacceptable. 	Extremely dry (low humidity) conditions can increase the amount of background shading.	Check the product environment.
	The toner cartridge might be defective.	Replace the toner cartridge.
	The product is set to override the **Replace black cartridge** message and to continue printing.	Replace the toner cartridge.
	Smooth media shows more background than plain media	Try using rougher media.
Toner smears appear on the media. 	The media might not meet HP specifications.	Use only media that meets HP specifications. See the user guide.
	If toner smears appear on the leading edge of the paper, the media guides are dirty, or debris has accumulated in the print path.	Clean the media guides. Clean the paper path. See Clean the paper path on page 94.
The toner smears easily when touched. 	The product is not set to print on the type of media on which you want to print.	In the printer driver, select the **Paper** tab and set **Type is** to match the type of media on which you are printing. Print speed might be slower if you are using heavy paper.
	The media might not meet HP specifications.	Use only media that meets HP specifications. See the user guide.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 94.

Problem	Cause	Solution
Marks repeatedly appear at even intervals on the printed side of the page. 	The product is not set to print on the type of media on which you want to print.	In the printer driver, select the **Paper** tab and set **Type is** to match the type of paper on which you are printing. Print speed might be slower if you are using heavy paper.
	Internal parts might have toner on them.	The problem typically corrects itself after a few more pages.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 94.
	The fuser might be damaged or dirty.	To determine if the fuser has a problem, open HP Device Toolbox, and print the print-quality diagnostics page. Clean the paper path. See Clean the paper path on page 94.
	The toner cartridge might have a problem.	Replace the toner cartridge.
Marks repeatedly appear at even intervals on the unprinted side of the page. 	Internal parts might have toner on them.	The problem typically corrects itself after a few more pages.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 94.
	The fuser might be damaged or dirty.	To determine if the fuser has a problem, open HP Device Toolbox and print the print-quality diagnostics page. Clean the paper path. See Clean the paper path on page 94.
The printed page contains misformed characters. 	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
	If characters are incorrectly formed so that they produce a wavy effect, the laser scanner might need service.	Verify that the problem also occurs on the configuration page.

Problem	Cause	Solution
The printed page is curled or wavy. 	The product is not set to print on the type of media on which you want to print.	In the printer driver, select the **Paper** tab and set **Type is** to match the type of paper on which you are printing. Print speed might be slower if you are using heavy paper.
	The **Service** menu item **Less Paper Curl** is set to **Off**.	Use the control-panel menus to change the setting. See Service menu on page 104.
	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
	Both high temperature and humidity can cause paper curl.	Check the product environment.
Text or graphics are skewed on the printed page. 	The media might be loaded incorrectly.	Ensure that the paper or other print media is loaded correctly and that the media guides are not too tight or too loose against the stack. See the user guide.
	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
The printed page contains wrinkles or creases. 	The media might be loaded incorrectly.	Verify that the media is loaded correctly and that the media guides are not too tight or too loose against the stack. See the user guide. Turn over the stack of paper in the input tray, or try rotating the paper 180° in the input tray.
	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
Toner appears around the printed characters. 	The media might be loaded incorrectly.	Turn over the stack of paper in the tray.
	If large amounts of toner have scattered around the characters, the paper might have high resistivity.	Use a different paper, such as high-quality paper that is intended for laser printers.

Problem	Cause	Solution
An image that appears at the top of the page (in solid black) repeats farther down the page (in a gray field). 	Software settings might affect image printing.	In your software program, change the tone (darkness) of the field in which the repeated image appears. In your software program, rotate the whole page 180° to print the lighter image first.
	The order of images printed might affect printing.	Change the order in which the images are printed. For example, have the lighter image at the top of the page, and the darker image farther down the page.
	A power surge might have affected the product.	If the defect occurs later in a print job, turn the product off for 10 minutes, and then turn on the product to restart the print job.
		Use non-glossy media to help reduce the severity of the defect

Clean the product

Clean the pickup and separation rollers

1. Turn off the product, unplug the power cable from the product, and then remove the rollers.
2. Dab a lint-free cloth in isopropyl alcohol, and then scrub the roller.

WARNING! Alcohol is flammable. Keep the alcohol and cloth away from an open flame. Before you close the product and connect the power cable, allow the alcohol to dry completely.

NOTE: In certain areas of California (USA), air pollution control regulations restrict the use of liquid isopropyl alcohol (IPA) as a cleaning agent. In those areas of California, please disregard the previous recommendations and use a dry, lint free cloth, moistened with water, to clean the pickup roller.

3. Use a dry, lint free cloth, to wipe the rollers and remove loose dirt.

Clean the paper path

During the printing process, paper, toner, and dust particles can accumulate inside the product. Over time, this buildup can cause print-quality problems such as toner specks or smearing. This product has a cleaning mode that can correct and prevent these types of problems.

Clean the paper path (LCD control panel)

1. On the product control panel, press the OK button to open the menus.
2. Open the following menus:
   - **Service**
   - **Cleaning Page**
3. Load plain paper in Tray 1, and then press the OK button to start the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Clean the paper path (touchscreen control panel)

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the **Service** menu.
3. Touch the **Cleaning Page** button.
4. Load plain letter or A4 paper when you are prompted.
5. Touch the OK button to begin the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Clean the touchscreen

Clean the touch screen whenever it is necessary to remove fingerprints or dust. Wipe the touch screen gently with a clean, water-dampened, lint-free cloth.

⚠ **CAUTION:** Use water only. Solvents or cleaners can damage the touch screen. Do not pour or spray water directly onto the touch screen.

Solve performance problems

Factors affecting print performance

Problem	Cause	Solution
Pages print but, are totally blank.	The sealing tape might still be in the toner cartridges.	Verify that the sealing tape has been completely removed from the toner cartridges.
	The document might contain blank pages.	Check the document that you are printing to see if content appears on all of the pages.
	The product might be malfunctioning.	To check the product, print a Configuration page.
Pages print very slowly. **NOTE:** The product print speed is effected by various factors (for example, media size or page complexity).	Heavier media types can slow the print job.	Print on a different type of media.
	Complex pages can print slowly.	Proper fusing might require a slower print speed to ensure the best print quality.
	Paper type not set correctly.	Select the type to match the paper.
Pages did not print.	The product might not be pulling media correctly.	Ensure paper is loaded in the tray correctly. If the problem persists, you might need to replace the pickup rollers and the separation pad.
	The media is jamming in the product.	Clear the jam.
	The USB cable might be defective or incorrectly connected.	• Disconnect the USB cable at both ends and reconnect it. • Try printing a job that has printed in the past. • Try using a different USB cable.
	Other devices are running on your computer.	The product might not share a USB port. If you have an external hard drive or network switchbox that is connected to the same port as the product, the other device might be interfering. To connect and use the product, you must disconnect the other device or you must use two USB ports on the computer.

Print speeds

Print speed is the number of pages that print in one minute. Print speed depends on different engine-process speeds or operational pauses between printed pages during normal product operation. Factors that determine the print speed of the product include the following:

- Page formatting time

  The product must pause for each page to be formatted before it prints. Complex pages take more time to format, resulting in reduced print speed. However, most jobs print at full engine speed (35 ppm on Letter-size media or 33 ppm on A4-size media).

- Media size

  Legal-size media reduces print speed because it is longer than the standard Letter- or A4–size media. A reduce print speed is used when printing on narrow media to prevent the edges of the fuser from overheating.

- Media mode

  Some media types require a reduced print speed to achieve maximum print quality on that media. For example, glossy, heavy, and specialty media (for example, envelopes or photos) require a reduced print speed. To maximize the print speed for special media types, ensure that you select the correct media type in the print driver.

- Product temperature

  To prevent product damage, print speed is reduced if the product reaches a specific internal temperature (thermal slow down). The starting temperature of the product, ambient environment temperature, and the print job size effect the number of pages that can be printed before the product reduces the print speed. Thermal slow down reduces print speed by printing four pages and then pausing for an amount of time before printing continues.

- Other print speed reduction factors

  Other factors (especially during large print jobs) that can cause reduced print speeds include:

  - Density control sequence; occurs every 150 pages and takes about 120 seconds.

The product does not print or it prints slowly

The product does not print

If the product does not print at all, try the following solutions.

1. Make sure the product is turned on and that the control panel indicates it is ready.
   - If the control panel does not indicate the product is ready, turn the product off and then on again.
   - If the control panel indicates the product is ready, try sending the job again.
2. If the control panel indicates the product has an error, resolve the error and then try sending the job again.

3. Make sure the cables are all connected correctly. If the product is connected to a network, check the following items:
    - Check the light next to the network connection on the product. If the network is active, the light is green.
    - Make sure that you are using a network cable and not a phone cord to connect to the network.
    - Make sure the network router, hub, or switch is turned on and that it is working correctly.
4. Install the HP software from the CD that came with the product. Using generic printer drivers can cause delays clearing jobs from the print queue.
5. From the list of printers on your computer, right-click the name of this product, click **Properties**, and open the **Ports** tab.
    - If you are using a network cable to connect to the network, make sure the printer name listed on the **Ports** tab matches the product name on the product configuration page.
    - If you are using a USB cable and are connecting to a wireless network, make sure the box is checked next to **Virtual printer port for USB**.
6. If you are using a personal firewall system on the computer, it might be blocking communication with the product. Try temporarily disabling the firewall to see if it is the source of the problem.
7. If your computer or the product is connected to a wireless network, low signal quality or interference might be delaying print jobs.

The product prints slowly

If the product prints, but it seems slow, try the following solutions.

1. Make sure the computer meets the minimum specifications for this product. For a list of specifications, go to this Web site: www.hp.com/support/ljm401series.
2. When you configure the product to print on some paper types, such as heavy paper, the product prints more slowly so it can correctly fuse the toner to the paper. If the paper type setting is not correct for the type of paper you are using, change the setting to the correct paper type.
3. If your computer or the product is connected to a wireless network, low signal quality or interference might be delaying print jobs.

Solve connectivity problems

Solve direct-connect problems

If you have connected the product directly to a computer, check the cable.

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 5 m (16.4 ft). Try using a shorter cable.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.

Solve network problems

Check the following items to verify that the product is communicating with the network. Before beginning, print a configuration page from the product control panel and locate the product IP address that is listed on this page.

- Poor physical connection
- The computer is using the incorrect IP address for the product
- The computer is unable to communicate with the product
- The product is using incorrect link and duplex settings for the network
- New software programs might be causing compatibility problems
- The computer or workstation might be set up incorrectly
- The product is disabled, or other network settings are incorrect

Poor physical connection

1. Verify that the product is attached to the correct network port using a cable of the correct length.
2. Verify that cable connections are secure.
3. Look at the network port connection on the back of the product, and verify that the amber activity light and the green link-status light are lit.
4. If the problem continues, try a different cable or port on the hub.

The computer is using the incorrect IP address for the product

1. Open the printer properties and click the **Ports** tab. Verify that the current IP address for the product is selected. The product IP address is listed on the product configuration page.
2. If you installed the product using the HP standard TCP/IP port, select the box labeled **Always print to this printer, even if its IP address changes.**

3. If you installed the product using a Microsoft standard TCP/IP port, use the hostname instead of the IP address.
4. If the IP address is correct, delete the port, and then create a new one.
5. If the error persists, delete the product and then add it again.

The computer is unable to communicate with the product

1. Test network communication by pinging the network.
   a. Open a command-line prompt on your computer. For Windows, click **Start**, click **Run**, and then type `cmd`.
   b. Type `ping` followed by the IP address for your product.
   c. If the window displays round-trip times, the network is working.
2. If the ping command failed, verify that the network hubs are on, and then verify that the network settings, the product, and the computer are all configured for the same network.

The product is using incorrect link and duplex settings for the network

Hewlett-Packard recommends leaving this setting in automatic mode (the default setting). If you change these settings, you must also change them for your network.

New software programs might be causing compatibility problems

Verify that any new software programs are correctly installed and that they use the correct printer driver.

The computer or workstation might be set up incorrectly

1. Check the network drivers, printer drivers, and the network redirection.
2. Verify that the operating system is configured correctly.

The product is disabled, or other network settings are incorrect

1. Review the configuration page to check the status of the network protocol. Enable it if necessary.
2. Reconfigure the network settings if necessary.

Solve wireless network problems

- Wireless connectivity checklist
- The control panel displays the message: The wireless feature on this product has been turned off
- The product does not print after the wireless configuration completes
- The product does not print, and the computer has a third-party firewall installed
- The wireless connection does not work after moving the wireless router or product
- Cannot connect more computers to the wireless product
- The wireless product loses communication when connected to a VPN
- The network does not appear in the wireless networks list
- The wireless network is not functioning

Wireless connectivity checklist

- The product and the wireless router are turned on and have power. Also make sure the wireless radio in the product is turned on.
- The service set identifier (SSID) is correct. Print a configuration page to determine the SSID. If you are not sure the SSID is correct, run the wireless setup again.
- With secured networks, make sure the security information is correct. If the security information is incorrect, run the wireless setup again.
- If the wireless network is working correctly, try accessing other computers on the wireless network. If the network has Internet access, try connecting to the Internet over a wireless connection.
- The encryption method (AES or TKIP) is the same for the product as it is for the wireless access point (on networks using WPA security).
- The product is within the range of the wireless network. For most networks, the product must be within 30 m (100 ft) of the wireless access point (wireless router).
- Obstacles do not block the wireless signal. Remove any large metal objects between the access point and the product. Make sure poles, walls, or support columns containing metal or concrete do not separate the product and wireless access point.
- The product is located away from electronic devices that might interfere with the wireless signal. Many devices can interfere with the wireless signal including motors, cordless phones, security system cameras, other wireless networks, and some Bluetooth devices.
- The printer driver is installed on the computer.
- You have selected the correct printer port.
- The computer and product connect to the same wireless network.

The control panel displays the message: The wireless feature on this product has been turned off

- ▲ Press the wireless button on the product to open the Wireless menu, and then turn the wireless radio on.

The product does not print after the wireless configuration completes

1. Make sure the product is turned on and in the ready state.
2. Make sure you are connecting to the correct wireless network.
3. Make sure that the wireless network is working correctly.
   a. Open the **Network Setup** menu, and then open the **Wireless Menu** item.
   b. Select the **Run Network Test** item to test the wireless network. The product prints a report with the results.
4. Make sure that your computer is working correctly. If necessary, restart your computer.

The product does not print, and the computer has a third-party firewall installed

1. Update the firewall with the most recent update available from the manufacturer.
2. If programs request firewall access when you install the product or try to print, make sure you allow the programs to run.
3. Temporarily turn off the firewall, and then install the wireless product on the computer. Enable the firewall when you have completed the wireless installation.

The wireless connection does not work after moving the wireless router or product

Make sure that the router or product connects to the same network that your computer connects to.

1. Open the **Reports** menu, and select the **Configuration Report** item to print the report.
2. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for your computer.
3. If the SSIDs are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for your product.

Cannot connect more computers to the wireless product

1. Make sure that the other computers are within the wireless range and that no obstacles block the signal. For most networks, the wireless range is within 30 m (100 ft) of the wireless access point.
2. Make sure the product is turned on and in the ready state.
3. Turn off any third-party firewalls on your computer.

4. Make sure that the wireless network is working correctly.

   a. On the product control panel, and then open the **Wireless Menu** item.

   b. Select the **Run Network Test** item to test the wireless network. The product prints a report with the results.

5. Make sure that your computer is working correctly. If necessary, restart your computer.

6. If the product is in Wireless Direct mode, make sure that the computer connection is pointing to the correct IP address. In Wireless Direct mode, the product has two IP addresses: one assigned by the router, and the other set by the Wireless Direct function. Use the printer IP address to connect other computers.

The wireless product loses communication when connected to a VPN

- Typically, you cannot connect to a VPN and other networks at the same time.

The network does not appear in the wireless networks list

- Make sure the wireless router is turned on and has power.
- The network might be hidden. However, you can still connect to a hidden network. You need to know the network name and the network security settings.

The wireless network is not functioning

1. Verify that the network is communicating. Find the product IP address on the configuration page, and then open a Web browser and enter the IP address to see if the HP Embedded Web Server will open.

2. Test network communication by pinging the network.

   a. Open a command-line prompt on your computer. For Windows, click **Start**, click **Run**, and then type `cmd`.

   b. Type `ping` followed by the service set identifier (SSID) for your network.

   c. If the window displays round-trip times, the network is working.

3. Make sure that the router or product connects to the same network that your computer connects to.

   a. Open the **Reports** menu, and select the **Configuration Report** item to print the report.

   b. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for your computer.

   c. If the SSIDs are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for your product.

Service mode functions

Service menu

Use the control-panel **Service** menu to troubleshoot product problems.

Service menu settings

The **Service** menu is used to adjust print settings, restore factory default settings, and clean the print paper path.

The following **Service** menu items are available:

- **Cleaning Page**—used to remove dust and toner from the print paper path.
- **USB Speed**—used to set the USB speed to high or full.
- **Less Paper Curl**—used to put the product into a mode that reduces paper curl.
- **Archive Print**—used to put the product into a mode that produces output less susceptible to toner smearing and dusting for preservation and archival.
- **Firmware Date**—used to display the product's firmware date code.
- **Restore Defaults**—used to reset all customer-accessible menu settings back to the factory default settings (except language) via the control panel or software.

NOTE: This **Service** menu item does not reset factory-settable settings, including formatter number, page counts, factory paper settings, language, and so on.

- **Signature Check**—used to configure how the product proceeds when a firmware upgrade file does not have a valid signature.
- **HP Smart Install**—used to enable or disable the HP Smart Install functionality.
- **LaserJet Update**—used to manually update the firmware or to set up automatic firmware updates.

Restore the factory-set defaults

Restore the factory-set defaults (LCD control panel)

1. On the product control panel, press the OK button to open the menus.
2. Open the following menus:
   - **Service**
   - **Restore Defaults**

   The product automatically restarts.

Restore the factory-set defaults (touchscreen control panel)

1. From the Home screen on the product control panel, touch the Setup button.
2. Scroll to and touch the **Service** menu.
3. Scroll to and touch the **Restore Defaults** button, and then touch the OK button.

   The product automatically restarts.

Secondary service menu

Use the secondary service menu to print service-related reports and to run special tests. Customers do not have access to this menu.

Open the secondary service menu

Open the secondary service menu (LCD control panel)

1. Make sure the product is in the Ready state.
2. At the product control panel, press the OK button to open the menus.
3. Press the left arrow button, and then quickly press the Cancel button.
4. The product returns to the Ready state. Press the OK button to reopen the menus.
5. Select the **2ndary Service** menu, and then press the OK button.
6. Use the arrow buttons to navigate the **2ndary Service** menu.

Open the secondary service menu (touchscreen control panel)

1. Make sure the product is in the Ready state.
2. From the Home screen on the product control panel, touch the Setup button.
3. Touch the left arrow button, and then quickly touch the Cancel button.
4. The product returns to the Ready state. touch the Setup button to reopen the menus.
5. Touch the **2ndary Service** menu.
6. Use the scrollbar to navigate the **2ndary Service** menu.

Secondary service menu structure

Table 2-7 Secondary Service menu

Menu item	Sub-menu item	Description
Service Reports	**Cont Self Test**	Print a continuous configuration page.
	Error Report	Print an error report.

Table 2-7 Secondary Service menu (continued)

Menu item	Sub-menu item	Description
Location	A list of available locations appears	This item sets certain product parameters that are dependent on the location, such as the default paper size and the symbol set. Scroll to the appropriate location and select **Yes** to set the location. The product automatically restarts after you change the location.
Line Frequency		This item allows the refresh rate of the touchscreen control panel to be changed between 50 and 60 Hz.
Display Test		Use this test to verify that the LEDs and characters on the control-panel display function correctly. At the beginning of the test, each of the LEDs is turned on one-at-time. Press the OK button to continue to the next LED. After the LED test is complete, the character test begins by testing the pixels on each line. Then, each of the 255 characters is displayed in groups of 16. Press the OK button to continue to the next group of 16 characters. You can cancel the test at any time by pressing the Cancel ✕.
Button Test		Use this test to verify that the control-panel buttons function correctly. The display prompts you to press each button.
Calibrate Touch Screen		Use this item to adjust the touchscreen control panel.
CP FW Version		This item shows the current date code of the firmware.
802.11n		(Wireless models only.) Enable or disable the wireless 802.11n functionality.
LED Test		This item allows the testing of the different LED Displays
NAND Reset		This item allows the NAND to be reset.
Speed		Use this item to toggle between high and low.

Product resets

NVRAM initialization

⚠ **CAUTION:** All HP Jetdirect settings are also reset. Be sure to print a configuration page before performing an NVRAM initialization. Make note of the IP address that is listed on the Jetdirect configuration page. You need to restore the IP address after performing an NVRAM initialization.

An NVRAM initialization erases all data stored in the unprotected NVRAM sections. Performing an NVRAM initialization resets the following settings and information:

- All menu settings are reset to factory default values.
- All localization settings, including language and country/region, are reset.

After performing an NVRAM initialization, reconfigure any computers that print to this product so that the computers can recognize the product.

1. Turn the product off.
2. Perform one of the following steps:
   - **LCD control panel models**: Simultaneously press and hold the right arrow button and the Cancel ✕ button. Keep these buttons depressed as you turn the product on.
   - **Touchscreen control panel models**: Press and hold the lower right quadrant of the touchscreen. Keep the quadrant depressed as you turn the product on.
3. When the **Permanent Storage Init.** message appears on the display, release the buttons.
4. When the product has finished the NVRAM initialization, it returns to the Ready state.

Super NVRAM initialization

A super NVRAM initialization restores the product to the "generic product mode" in which it arrived from the factory. This means that you will have to reset the language and country/region settings when the product starts after the initialization. A super NVRAM initialization erases all data stored in the protected and unprotected NVRAM sections.

1. Turn the product off.
2. Perform one of the following steps:
   - **LCD control panel models**: Simultaneously press and hold the left arrow button and the Cancel ✕ button. Keep these buttons depressed as you turn the product on.
   - **Touchscreen control panel models**: Press and hold the lower left quadrant of the touchscreen. Keep the quadrant depressed as you turn the product on.
3. When the **Permanent Storage Init.** message appears on the display, release the buttons.
4. When the super NVRAM initialization has been completed, the product enters the generic product mode.

Manually update the firmware

Manually update the firmware (LCD control panel)

1. On the product control panel, press the OK button to open the menus.
2. Open the following menus:
   - **Service**
   - **LaserJet Update**
   - **Check For Updates Now**
3. Select the **Yes** option, and then press the OK button to prompt the product to search for firmware updates. If the product detects an upgrade, it will begin the update process.

NOTE: The **LaserJet Update** menu also contains items that allow you to set up automatic firmware updates for the product, allow you to upload an earlier firmware version, and enable or disable a prompt prior to a firmware file upload.

Manually update the firmware (touchscreen control panel)

1. From the Home screen on the product control panel, touch the Setup button.
2. Open the following menus:
   - **Service**
   - **LaserJet Update**
   - **Check For Updates Now**
3. Touch the **Yes** button to prompt the product to search for firmware updates. If the product detects an upgrade, it will begin the update process.

NOTE: The **LaserJet Update** menu also contains items that allow you to set up automatic firmware updates for the product, allow you to upload an earlier firmware version, and enable or disable a prompt prior to a firmware file upload.

A Service and support

- Hewlett-Packard limited warranty statement
- HP's Premium Protection Warranty: LaserJet toner cartridge limited warranty statement
- HP policy on non-HP supplies
- HP anticounterfeit Web site
- Data stored on the toner cartridge
- End User License Agreement
- OpenSSL
- Customer support
- Repack the product

Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP LaserJet Pro 400 M401a, M401d, M401n, M401dn, M401dw	One-year product exchange

HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or equivalent in performance to new.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTIES ARE EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE. Some countries/regions, states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion might not apply to you. This warranty gives you specific legal rights and you might also have other rights that vary from country/region to country/region, state to state, or province to province.

HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE YOUR SOLE AND EXCLUSIVE REMEDIES. EXCEPT AS INDICATED ABOVE, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some countries/regions, states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

HP's Premium Protection Warranty: LaserJet toner cartridge limited warranty statement

This HP product is warranted to be free from defects in materials and workmanship.

This warranty does not apply to products that (a) have been refilled, refurbished, remanufactured or tampered with in any way, (b) experience problems resulting from misuse, improper storage, or operation outside of the published environmental specifications for the printer product or (c) exhibit wear from ordinary use.

To obtain warranty service, please return the product to place of purchase (with a written description of the problem and print samples) or contact HP customer support. At HP's option, HP will either replace products that prove to be defective or refund your purchase price.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE ABOVE WARRANTY IS EXCLUSIVE AND NO OTHER WARRANTY OR CONDITION, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED AND HP SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

TO THE EXTENT ALLOWED BY LOCAL LAW, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

HP policy on non-HP supplies

Hewlett-Packard Company cannot recommend the use of non-HP toner cartridges, either new or remanufactured.

NOTE: For HP printer products, the use of a non-HP toner cartridge or a refilled toner cartridge does not affect either the warranty to the customer or any HP support contract with the customer. However, if product failure or damage is attributable to the use of a non-HP toner cartridge or refilled toner cartridge, HP will charge its standard time and materials charges to service the product for the particular failure or damage.

HP anticounterfeit Web site

Go to www.hp.com/go/anticounterfeit when you install an HP toner cartridge and the control-panel message says the cartridge is non-HP. HP will help determine if the cartridge is genuine and take steps to resolve the problem.

Your toner cartridge might not be a genuine HP toner cartridge if you notice the following:

- The supplies status page indicates that a non-HP supply is installed.
- You are experiencing a high number of problems with the cartridge.
- The cartridge does not look like it usually does (for example, the packaging differs from HP packaging).

Data stored on the toner cartridge

The HP toner cartridges used with this product contain a memory chip that assists in the operation of the product.

In addition, this memory chip collects a limited set of information about the usage of the product, which might include the following: the date when the toner cartridge was first installed, the date when the toner cartridge was last used, the number of pages printed using the toner cartridge, the page coverage, the printing modes used, any printing errors that might have occurred, and the product model. This information helps HP design future products to meet our customers' printing needs.

The data collected from the toner cartridge memory chip does not contain information that can be used to identify a customer or user of the toner cartridge or their product.

HP collects a sampling of the memory chips from toner cartridges returned to HP's free return and recycling program (HP Planet Partners: www.hp.com/recycle). The memory chips from this sampling are read and studied in order to improve future HP products. HP partners who assist in recycling this toner cartridge might have access to this data, as well.

Any third party possessing the toner cartridge might have access to the anonymous information on the memory chip.

End User License Agreement

PLEASE READ CAREFULLY BEFORE USING THIS SOFTWARE PRODUCT: This End-User License Agreement ("EULA") is a contract between (a) you (either an individual or the entity you represent) and (b) Hewlett-Packard Company ("HP") that governs your use of the software product ("Software"). This EULA does not apply if there is a separate license agreement between you and HP or its suppliers for the Software, including a license agreement in online documentation. The term "Software" may include (i) associated media, (ii) a user guide and other printed materials, and (iii) "online" or electronic documentation (collectively "User Documentation").

RIGHTS IN THE SOFTWARE ARE OFFERED ONLY ON THE CONDITION THAT YOU AGREE TO ALL TERMS AND CONDITIONS OF THIS EULA. BY INSTALLING, COPYING, DOWNLOADING, OR OTHERWISE USING THE SOFTWARE, YOU AGREE TO BE BOUND BY THIS EULA. IF YOU DO NOT ACCEPT THIS EULA, DO NOT INSTALL, DOWNLOAD, OR OTHERWISE USE THE SOFTWARE. IF YOU PURCHASED THE SOFTWARE BUT DO NOT AGREE TO THIS EULA, PLEASE RETURN THE SOFTWARE TO YOUR PLACE OF PURCHASE WITHIN FOURTEEN DAYS FOR A REFUND OF THE PURCHASE PRICE; IF THE SOFTWARE IS INSTALLED ON OR MADE AVAILABLE WITH ANOTHER HP PRODUCT, YOU MAY RETURN THE ENTIRE UNUSED PRODUCT.

1. THIRD PARTY SOFTWARE. The Software may include, in addition to HP proprietary software ("HP Software"), software under licenses from third parties ("Third Party Software" and "Third Party License"). Any Third Party Software is licensed to you subject to the terms and conditions of the corresponding Third Party License. Generally, the Third Party License is in a file such as "license.txt" or a "readme" file. You should contact HP support if you cannot find a Third Party License. If the Third Party Licenses include licenses that provide for the availability of source code (such as the GNU General Public License) and the corresponding source code is not included with the Software, then check the product support pages of HP's website (hp.com) to learn how to obtain such source code.

2. LICENSE RIGHTS. You will have the following rights provided you comply with all terms and conditions of this EULA:

   a. Use. HP grants you a license to Use one copy of the HP Software. "Use" means installing, copying, storing, loading, executing, displaying, or otherwise using the HP Software. You may not modify the HP Software or disable any licensing or control feature of the HP Software. If this Software is provided by HP for Use with an imaging or printing product (for example, if the Software is a printer driver, firmware, or add-on), the HP Software may only be used with such product ("HP Product"). Additional restrictions on Use may appear in the User Documentation. You may not separate component parts of the HP Software for Use. You do not have the right to distribute the HP Software.

   b. Copying. Your right to copy means you may make archival or back-up copies of the HP Software, provided each copy contains all the original HP Software's proprietary notices and is used only for back-up purposes.

3. UPGRADES. To Use HP Software provided by HP as an upgrade, update, or supplement (collectively "Upgrade"), you must first be licensed for the original HP Software identified by HP as eligible for the Upgrade. To the extent the Upgrade supersedes the original HP Software, you may no longer use such HP Software. This EULA applies to each Upgrade unless HP provides other terms with the Upgrade. In case of a conflict between this EULA and such other terms, the other terms will prevail.

4. TRANSFER.

   a. Third Party Transfer. The initial end user of the HP Software may make a one-time transfer of the HP Software to another end user. Any transfer will include all component parts, media, User Documentation, this EULA, and if applicable, the Certificate of Authenticity. The transfer may not be an indirect transfer, such as a consignment. Prior to the transfer, the end user receiving the transferred Software will agree to this EULA. Upon transfer of the HP Software, your license is automatically terminated.

   b. Restrictions. You may not rent, lease or lend the HP Software or Use the HP Software for commercial timesharing or bureau use. You may not sublicense, assign or otherwise transfer the HP Software except as expressly provided in this EULA.

5. PROPRIETARY RIGHTS. All intellectual property rights in the Software and User Documentation are owned by HP or its suppliers and are protected by law, including applicable copyright, trade secret, patent, and trademark laws. You will not remove any product identification, copyright notice, or proprietary restriction from the Software.

6. LIMITATION ON REVERSE ENGINEERING. You may not reverse engineer, decompile, or disassemble the HP Software, except and only to the extent that the right to do so is allowed under applicable law.

7. CONSENT TO USE OF DATA. HP and its affiliates may collect and use technical information you provide in relation to (i) your Use of the Software or the HP Product, or (ii) the provision of support services related to the Software or the HP Product. All such information will be subject to HP's privacy policy. HP will not use such information in a form that personally identifies you except to the extent necessary to enhance your Use or provide support services.

8. LIMITATION OF LIABILITY. Notwithstanding any damages that you might incur, the entire liability of HP and its suppliers under this EULA and your exclusive remedy under this EULA will be limited to the greater of the amount actually paid by you for the Product or U.S. $5.00. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT WILL HP OR ITS SUPPLIERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOST PROFITS, LOST DATA, BUSINESS INTERRUPTION, PERSONAL INJURY, OR LOSS OF PRIVACY) RELATED IN ANY WAY TO THE USE OF OR INABILITY TO USE THE SOFTWARE, EVEN IF HP OR ANY SUPPLIER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND EVEN IF THE ABOVE REMEDY FAILS OF ITS ESSENTIAL PURPOSE. Some states or other jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

9. U.S. GOVERNMENT CUSTOMERS. Software was developed entirely at private expense. All Software is commercial computer software within the meaning of the applicable acquisition regulations. Accordingly, pursuant to US FAR 48 CFR 12.212 and DFAR 48 CFR 227.7202, use, duplication and disclosure of the Software by or for the U.S. Government or a U.S. Government subcontractor is subject solely to the terms and conditions set forth in this End User License Agreement, except for provisions which are contrary to applicable mandatory federal laws.

10. COMPLIANCE WITH EXPORT LAWS. You will comply with all laws, rules, and regulations (i) applicable to the export or import of the Software, or (ii) restricting the Use of the Software, including any restrictions on nuclear, chemical, or biological weapons proliferation.

11. RESERVATION OF RIGHTS. HP and its suppliers reserve all rights not expressly granted to you in this EULA.

© 2009 Hewlett-Packard Development Company, L.P.

Rev. 04/09

OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Customer support

Get telephone support for your country/region Have the product name, serial number, date of purchase, and problem description ready.	Country/region phone numbers are on the flyer that was in the box with your product or at www.hp.com/support/.
Get 24-hour Internet support	www.hp.com/support/ljm401series
Download software utilities, drivers, and electronic information	www.hp.com/support/ljm401series
Order additional HP service or maintenance agreements	www.hp.com/go/carepack
Register your product	www.register.hp.com

Repack the product

If HP Customer Care determines that your product needs to be returned to HP for repair, follow these steps to repack the product before shipping it.

CAUTION: Shipping damage as a result of inadequate packing is the customer's responsibility.

1. Remove and retain the toner cartridge.

   CAUTION: It is *extremely important* to remove the toner cartridge before shipping the product. A toner cartridge that remains in the product during shipping can leak and cover the product engine and other parts with toner.

   To prevent damage to the toner cartridge, avoid touching the rollers on it, and store the toner cartridge so that it is not exposed to light.

2. Remove and retain the power cable, interface cable, and any optional accessories.
3. If possible, include print samples and 50 to 100 sheets of paper that did not print correctly.
4. In the U.S., call HP Customer Care to request new packing material. In other areas, use the original packing material, if possible.

B Product specifications

- Physical specifications
- Power consumption, electrical specifications, and acoustic emissions
- Environmental specifications

Physical specifications

Table B-1 Physical specifications

Product	Height	Depth	Width	Weight
HP LaserJet Pro 400 M401a Printer HP LaserJet Pro 400 M401d Printer HP LaserJet Pro 400 M401n Printer HP LaserJet Pro 400 M401dn Printer	264 mm (10.4 in)	369 mm (14.5 in)	365 mm (14.3 in)	9.8 kg (21.6 lb)
HP LaserJet Pro 400 M401dw Printer	268 mm (10.5 in)	369 mm (14.5 in)	365 mm (14.3 in)	10.6 kg (23.4 lb)

Power consumption, electrical specifications, and acoustic emissions

See www.hp.com/support/ljm401series for current information.

Environmental specifications

Table B-2 Operating-environment specifications

Environment	Recommended	Allowed
Temperature	17° to 25°C (62.6° to 77°F)	15° to 30°C (59° to 86°F)
Relative humidity	30% to 70% relative humidity (RH)	10% to 80% RH
Altitude	Not applicable	0 to 3048 m (0 to 10,000 ft)

C Regulatory information

- FCC regulations
- Environmental product stewardship program
- Declaration of conformity
- Declaration of conformity
- Safety statements
- Additional statements for wireless products

FCC regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/TV technician.

NOTE: Any changes or modifications to the printer that are not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class B limits of Part 15 of FCC rules.

Environmental product stewardship program

Protecting the environment

Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This product has been designed with several attributes to minimize impacts on our environment.

Ozone production

This product generates no appreciable ozone gas (O_3).

Power consumption

Power usage drops significantly while in Sleep mode, which saves natural resources and saves money without affecting the high performance of this product. Hewlett-Packard printing and imaging equipment marked with the ENERGY STAR® logo is qualified to the U.S. Environmental Protection Agency's ENERGY STAR specifications for imaging equipment. The following mark will appear on ENERGY STAR qualified imaging products:

Additional ENERGY STAR qualified imaging product model information is listed at:

www.hp.com/go/energystar

Toner consumption

EconoMode uses less toner, which might extend the life of the toner cartridge. HP does not recommend the full-time use of EconoMode. If EconoMode is used full-time, the toner supply might outlast the mechanical parts in the toner cartridge. If print quality begins to degrade and is no longer acceptable, consider replacing the toner cartridge.

Paper use

This product's manual/automatic duplex feature (two-sided printing) and N-up printing (multiple pages printed on one page) capability can reduce paper usage and the resulting demands on natural resources.

Plastics

Plastic parts over 25 grams are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product's life.

HP LaserJet print supplies

It's easy to return and recycle your HP LaserJet toner cartridges after use—free of charge—with HP Planet Partners. Multilingual program information and instructions are included in every new HP LaserJet toner cartridge and supplies package. You help reduce the toll on the environment further when you return multiple cartridges together rather than separately.

HP is committed to providing inventive, high-quality products and services that are environmentally sound, from product design and manufacturing to distribution, customer use and recycling. When you participate in the HP Planet Partners program, we ensure your HP LaserJet toner cartridges are recycled properly, processing them to recover plastics and metals for new products and diverting millions of tons of waste from landfills. Since this cartridge is being recycled and used in new materials, it will not be returned to you. Thank you for being environmentally responsible!

NOTE: Use the return label to return original HP LaserJet toner cartridges only. Please do not use this label for HP inkjet cartridges, non-HP cartridges, refilled or remanufactured cartridges or warranty returns. For information about recycling your HP inkjet cartridges please go to http://www.hp.com/recycle.

Return and recycling instructions

United States and Puerto Rico

The enclosed label in the HP LaserJet toner cartridge box is for the return and recycling of one or more HP LaserJet toner cartridges after use. Please follow the applicable instructions below.

Multiple returns (more than one cartridge)

1. Package each HP LaserJet toner cartridge in its original box and bag.
2. Tape the boxes together using strapping or packaging tape. The package can weigh up to 31 kg (70 lb).
3. Use a single pre-paid shipping label.

OR

1. Use your own suitable box, or request a free bulk collection box from www.hp.com/recycle or 1-800-340-2445 (holds up to 31 kg (70 lb) of HP LaserJet toner cartridges).
2. Use a single pre-paid shipping label.

Single returns

1. Package the HP LaserJet toner cartridge in its original bag and box.
2. Place the shipping label on the front of the box.

Shipping

For US and Puerto Rico HP LaserJet toner cartridge recycling returns, use the pre-paid, pre-addressed shipping label contained in the box. To use the UPS label, give the package to the UPS driver during

your next delivery or pick-up, or take it to an authorized UPS drop-off center. (Requested UPS Ground pickup will be charged normal pick-up rates) For the location of your local UPS drop-off center, call 1-800-PICKUPS or visit www.ups.com.

If you are returning the package with the FedEx label, give the package to either the U.S. Postal Service carrier or FedEx driver during your next pick-up or delivery. (Requested FedEx Ground pickup will be charged normal pick-up rates). Or, you can drop off your packaged toner cartridge(s) at any U.S. Post Office or any FedEx shipping center or store. For the location of your nearest U.S. Post Office, please call 1-800-ASK-USPS or visit www.usps.com. For the location of your nearest FedEx shipping center/ store, please call 1-800-GOFEDEX or visit www.fedex.com.

For more information, or to order additional labels or boxes for bulk returns, visit www.hp.com/recycle or call 1-800-340-2445. Information subject to change without notice.

Residents of Alaska and Hawaii

Do not use the UPS label. Call 1-800-340-2445 for information and instructions. The U.S. Postal Service provides no-cost cartridge return transportation services under an arrangement with HP for Alaska and Hawaii.

Non-U.S. returns

To participate in HP Planet Partners return and recycling program, just follow the simple directions in the recycling guide (found inside the packaging of your new product supply item) or visit www.hp.com/recycle. Select your country/region for information on how to return your HP LaserJet printing supplies.

Paper

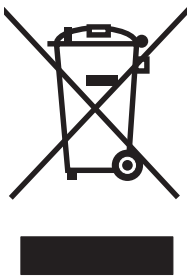
This product is capable of using recycled papers when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Print Media Guide*. This product is suitable for the use of recycled paper according to EN12281:2002.

Material restrictions

This HP product does not contain added mercury.

This HP product does not contain a battery.

Disposal of waste equipment by users



This symbol means do not dispose of your product with your other household waste. Instead, you should protect human health and the environment by handing over your waste equipment to a designated collection point for the recycling of waste electrical and electronic equipment. For more information, please contact your household waste disposal service, or go to: www.hp.com/recycle.

Electronic hardware recycling

HP encourages customers to recycle used electronic hardware. For more information about recycling programs go to: www.hp.com/recycle.

Chemical substances

HP is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at: www.hp.com/go/reach.

Material Safety Data Sheet (MSDS)

Material Safety Data Sheets (MSDS) for supplies containing chemical substances (for example, toner) can be obtained by accessing the HP Web site at www.hp.com/go/msds or www.hp.com/hpinfo/community/environment/productinfo/safety.

For more information

To obtain information about these environmental topics:

- Product environmental profile sheet for this and many related HP products
- HP's commitment to the environment
- HP's environmental management system
- HP's end-of-life product return and recycling program
- Material Safety Data Sheets

Visit www.hp.com/go/environment or www.hp.com/hpinfo/globalcitizenship/environment.

Declaration of conformity

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology R&D (Shanghai) Co., Ltd.	DoC#: SHNGC-1100-00-rel.1.0
Manufacturer's Address:	Building 6, No. 690 BiBo Road ZhangJiang, Shanghai, China	
declares, that the product		
Product Name:	HP LaserJet Pro 400 M401a, M401n, M401d, M401dn	
Regulatory Model:[2)]	SHNGC-1100-00	
Product Options:	All	
Print Cartridges:	CF280A	
conforms to the following Product Specifications:		
SAFETY:	IEC 60950-1:2005 / EN60950-1: 2006 +A11+A1 IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product) IEC 62479:2010/EN 62479:2010 GB4943-2001	
EMC:	CISPR22:2005 +A1/ EN55022:2006 +A1 - Class B[1)] EN 61000-3-2:2006 +A1 +A2 EN 61000-3-3:2008 EN 55024:1998 +A1 +A2 FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4 GB9254-2008, GB17625.1-2003	
ENERGY USE:	Regulation (EC) No. 1275/2008: ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC, the EuP Directive 2005/32/EC, and carries the CE-Marking CE accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, these products are assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).

Shanghai, China

May 11, 2011

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140, D-71034, Böblingen (Fax: +49-7031-14-3143) www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015 (Phone: 208-396-6000)

Declaration of conformity

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology R&D (Shanghai) Co., Ltd.	DoC#: SHNGC-1100-01-rel.1.0
Manufacturer's Address:	Building 6, No. 690 BiBo Road ZhangJiang, Shanghai, China	
declares, that the product		
Product Name:	HP LaserJet Pro 400 M401dw	
Regulatory Model:[2)]	SHNGC-1100-01	
Product Options:	All	
Radio Module:[3)]	SDGOB-0892	
Print Cartridges:	CF280A	
conforms to the following Product Specifications:		
SAFETY:	IEC 60950-1:2005 / EN60950-1: 2006 +A11+A1	
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)	
	IEC 62479:2010/EN 62479:2010	
	GB4943-2001	
EMC:	CISPR22:2005 +A1/ EN55022:2006 +A1 - Class B[1)]	
	EN 61000-3-2:2006 +A1 +A2	
	EN 61000-3-3:2008	
	EN 55024:1998 +A1 +A2	
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4	
	GB9254-2008, GB17625.1-2003	
Radio:[3)]	IEC 62311: 2007/ EN62311: 2008	
	EN 301 489-1:V1.8.1 / EN 301 489-17:V2.1.1	
	EN 300 328: V1.7.1	
	FCC Title 47 CFR, Part 15 Subpart C (Section 15.247) / IC: RSS-210	
ENERGY USE:	Regulation (EC) No. 1275/2008:	
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	

Supplementary Information:

The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC Annex IV, EMC Directive 2004/108/EC, the Low Voltage Directive 2006/95/EC and the EuP Directive 2005/32/EC, and carries the CE-Marking CE ① accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, these products are assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).
3. This product uses a radio module device which Regulatory Model number is SDGOB-0892 as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

Shanghai, China

May 11, 2011

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140, D-71034, Böblingen (FAX: +49-7031-14-3143) www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015 (Phone: 208-396-6000)

Safety statements

Laser safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The device is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside the device is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

⚠ **WARNING!** Using controls, making adjustments, or performing procedures other than those specified in this user guide may result in exposure to hazardous radiation.

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

« Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

VCCI statement (Japan)

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

Power cord instructions

Make sure your power source is adequate for the product voltage rating. The voltage rating is on the product label. The product uses either 110-127 Vac or 220-240 Vac and 50/60 Hz.

Connect the power cord between the product and a grounded AC outlet.

⚠ **CAUTION:** To prevent damage to the product, use only the power cord that is provided with the product.

Power cord statement (Japan)

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

EMC statement (Korea)

B급 기기 (가정용 방송통신기기)	이 기기는 가정용(B급)으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Laser statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet Pro 400 M401a, M401d, M401n, M401dn, M401dw, laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (2007) mukaisesti.

VAROITUS !

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING !

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO

HP LaserJet Pro 400 M401a, M401d, M401n, M401dn, M401dw - kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO !

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömällelasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

VARNING !

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista: Aallonpituus 775-795 nm Teho 5 m W Luokan 3B laser.

GS statement (Germany)

Das Gerät ist nicht für die Benutzung im unmittelbaren Gesichtsfeld am Bildschirmarbeitsplatz vorgesehen. Um störende Reflexionen am Bildschirmarbeitsplatz zu vermeiden, darf dieses Produkt nicht im unmittelbaren Gesichtsfeld platziert warden.

Das Gerät ist kein Bildschirmarbeitsplatz gemäß BildscharbV. Bei ungünstigen Lichtverhältnissen (z. B. direkte Sonneneinstrahlung) kann es zu Reflexionen auf dem Display und damit zu Einschränkungen der Lesbarkeit der dargestellten Zeichen kommen.

Substances Table (China)

有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
打印引擎	X	0	0	0	0	0
控制面板	0	0	0	0	0	0
塑料外壳	0	0	0	0	0	0
格式化板组件	X	0	0	0	0	0
碳粉盒	X	0	0	0	0	0

0609

0：表示在此部件所用的所有同类材料中，所含的此有毒或有害物质均低于 SJ/T11363-2006 的限制要求。
X：表示在此部件所用的所有同类材料中，至少一种所含的此有毒或有害物质高于 SJ/T11363-2006 的限制要求。

注：引用的“环保使用期限”是根据在正常温度和湿度条件下操作使用产品而确定的。

Restriction on Hazardous Substances statement (Turkey)

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

Restriction on Hazardous Substances statement (Ukraine)

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057

Additional statements for wireless products

FCC compliance statement—United States

Exposure to radio frequency radiation

⚠ **CAUTION:** The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 in) during normal operation.

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

⚠ **CAUTION:** Based on Section 15.21 of the FCC rules, changes of modifications to the operation of this product without the express approval by Hewlett-Packard Company may invalidate its authorized use.

Australia statement

This device incorporates a radio-transmitting (wireless) device. For protection against radio transmission exposure, it is recommended that this device be operated no less than 20 cm from the head, neck, or body.

Brazil ANATEL statement

Este equipamento opera em caráter secundário, isto é, não tem direito à proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

Canadian statements

For Indoor Use. This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications. The internal wireless radio complies with RSS 210 of Industry Canada.

Pour l´usage d´intérieur. Le présent appareil numérique n´émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescribes dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada. Le composant RF interne est conforme à la norme CNR-210 d´Industrie Canada.

European Union regulatory notice

The telecommunications functionality of this product may be used in the following EU and EFTA countries/regions:

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

Notice for use in France

For 2.4 GHz Wireless LAN operation of this product certain restrictions apply: This equipment may be used indoor for the entire 2400-2483.5 MHz frequency band (channels 1-13). For outdoor use, only 2400-2454 MHz frequency band (channels 1-9) may be used. For the latest requirements, see www.arcep.fr.

L'utilisation de cet equipement (2.4 GHz Wireless LAN) est soumise à certaines restrictions : Cet équipement peut être utilisé à l'intérieur d'un bâtiment en utilisant toutes les fréquences de 2400-2483.5 MHz (Chaine 1-13). Pour une utilisation en environnement extérieur, vous devez utiliser les fréquences comprises entre 2400-2454 MHz (Chaine 1-9). Pour les dernières restrictions, voir, www.arcep.fr.

Notice for use in Russia

Существуют определенные ограничения по использованию беспроводных сетей (стандарта 802.11 b/g) с рабочей частотой 2,4 ГГц: Данное оборудование может использоваться внутри помещений с использованием диапазона частот 2400-2483,5 МГц (каналы 1-13). При использовании внутри помещений максимальная эффективная изотропно–излучаемая мощность (ЭИИМ) должна составлять не более 100мВт.

Mexico statement

Aviso para los usuarios de México

"La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada."

Korean statement

당해 무선설비는 운용 중 전파혼선 가능성이 있음

Taiwan statement

低功率電波輻射性電機管理辦法

第十二條　經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條　低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。
低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Vietnam Telecom wired/wireless marking for ICTQC Type approved products

Index

Symbols/Numerics

2ndary service menu 105

A

abnormal temperature 14, 15
acoustic specifications 124
anticounterfeit supplies 114
archive setting 64
automatic crossover, setting 66

B

background, gray 90
bands, troubleshooting 90
batteries included 129
bias circuits 11
bins, output
  jams, clearing 85
blank pages, troubleshooting 96

C

cables
  USB, troubleshooting 96
calibrating touchscreen 106
Canadian DOC regulations 135
cartridge
  image-formation system 20
cartridges
  non-HP 113
  recycling 128
  supplies status page 60
  warranty 112
cautions iii
characters, troubleshooting 91
checklists
  pre-troubleshooting 41
  problem source 43
checklists, printing 60
circuits
  bias 11
  drive failure 15
  fuser control 12
  fuser heater safety 14
  fuser temperature 13
clean
  touch screen 95
cleaning
  mode 104
  paper path 56, 94
cleaning stage
  drum 26
configuration page 57, 59
connectivity
  solving problems 99
contrast
  display, control panel 63
control panel
  blank, troubleshooting 44
  button test 106
  clean touch screen 95
  cleaning page, printing 56, 94
  display contrast 63
  display test 106
  language 61
  menu map, printing 59
  message types 68
  messages, troubleshooting 68
  Network Setup menu 66
  Reports menu 59
  Service menu 64
  System Setup menu 61
conventions, document iii
counterfeit supplies 114
Courier font settings 64
creases, troubleshooting 92
crooked pages 92
curl, paper
  settings 64
curled media 92
customer support
  online 120
  repacking product 121

D

DC controller
  electrical components 7
  engine control system 6
  laser scanner system operations 18
  pickup and feed system operations 27
default settings, restoring 64
  NVRAM initialization 106
defaults
  restoring 104
demo page 59
developing stage 22
diagrams
  components 3
  DC controller 7
  engine control systems 6
  fan (FM1) 10
  high-voltage power supply 11
  low-voltage power supply 16
  main motor (M1) 9
  major systems 2
display contrast, setting 63
disposal, end-of-life 129
document conventions iii
dots, troubleshooting 89
drive circuit failure 15
drivers
  usage page 60
drum, image formation operations 21

E

electrical components
  DC controller 7
  paper feeder 32, 33
  pickup and feed 0
electrical safety 17
electrical specifications 124
electronic hardware recycling 130
end-of-life disposal 129
engine control
  DC controller 7
  high-voltage power supply 11
environmental stewardship program 127
error messages
  error report 76
  event log 76
error messages, control panel 68

F

factory defaults, restoring 64
  NVRAM initialization 106
faded print 89
failure
  at start-up 14
fan control 10
fans
  DC controller 7
  diagram 10
Finnish laser safety statement 136
firmware version 106
FM1
  diagram 10
fonts
  Courier settings 64
  lists, printing 60
fraud Web site 114
fuser
  electrical components 12
  failure detection 14
  heater safety circuit 14
  protection function 14
  temperature control 12, 13
fuser control circuts 12
fuser heater (H1) 12
fusing stage 25

G

graph paper, printing 60
gray background, troubleshooting 90

H

H1 (fuser heater) 12
high temperature 15
high-voltage power supply
  diagram 11
HP Customer Care 120
HP Device Toolbox, using 55
HP fraud Web site 114
HP Jetdirect print server
  NVRAM initialization 106
HVPS (high-voltage power supply)
  .diagram 11

I

image formation
  cleaning stage 26
  developing stage 22
  development stage 22
  fusing stage 25
  latent-image stage 21
  paper transfer stage 24
  process 21
  seperation stage 24
  systems 20
  transfer stage 24
image quality
  archive setting 64
  solving 89
  troubleshooting defects 58
information pages
  configuration page 57
initial rotation period 4
initialization
  NVRAM 106
INTR (initial rotation) operation period 4

J

jam detection
  detection operations 29, 34
jams
  locating 80
  output bin, clearing 85
  preventing 80
  tracking number of 60
Japanese VCCI statement 135
Jetdirect print server
  NVRAM initialization 106

K

Korean EMC statement 136

L

language, control panel 61
laser
  -beam exposure stage 22
  scanner system operations 18
laser safety statements 135, 136
last rotation operation period 4
latent-image formation stage 21
LEDs, troubleshooting 46
license, software 116
light print, troubleshooting 89
lightness
  faded print, troubleshooting 89
lines, troubleshooting 90
  printed pages 90
location
  setting 106
loose toner, troubleshooting 90
low temperature 14
low-voltage power supply 16
  failure 17
LSTR (last rotation) operation period 4
LVPS (low-voltage power supply 16

M

M1
  diagram 9
main motor
  diagram 9
material restrictions 129
Material Safety Data Sheet (MSDS) 130
media
  curled, troubleshooting 92
  default settings 61
  jam detection operations 29, 34
  wrinkled 92
memory
  NVRAM initialization 106
memory chip, toner cartridge
  description 115
menu
  Quick Forms 60

menus, control panel
map, printing 59
Network Setup 66
Reports 59
Service 64
System Setup 61
mercury-free product 129
messages, control panel 68
motor control 9
motors
DC controller 7
main in diagram 9
pickup and feed components 0
music paper, printing 60

N
Network Setup menu 66
networks
configuration page 59
settings 66
settings report 60
non-HP supplies 113
notebook paper, printing 60
notes iii
NVRAM initialization 106

O
online support 120
operations
engine control system 6
image-formation system 20
jam detection 29, 34
laser scanner system 18
pickup and feed system 27
product systems 6
sequence of 4
output quality
archive setting 64
overcurrent protection 16

P
packaging product 121
page count 60
pages
blank 96
not printing 96
printing slowly 96
skewed 92
paper
curl settings 64
curled, troubleshooting 92
default settings 61
feed stage 24
jam detection operations 29, 34
jams 80
separation stage 24
wrinkled 92
paper feeder
components 32
operation 33
paper jam
sensors 29, 34
paper jams
locating 80
paper path
Tray 2 27
Tray 3 31
paper pickup problems
solving 88
PCL font list 60
photointerrupters
DC controllers 7
photosensitive drum
image formation operations 21
physical specifications 124
pickup and feed system
electrical components 0
pickup and feed system operations 27
power
consumption 124
high-voltage supply 11
low-voltage supply 16
protective function 16
safety 17
power-on
troubleshooting 44
powersave 104
pre-troubleshooting checklist 41
primary charging stage 22
print cartridge
image-formation system 20
PRINT operation period 4
print quality
archive setting 64
printing
configuration page 57
troubleshooting 96
problem-solving
no response 97
slow response 98
product
components 3
major systems 2
operation sequence 4, 7
PS font list 60

Q
quality
archive setting 64
troubleshooting repetitive image defects 58

R
recycling 128
electronic hardware 130
HP printing supplies returns and environmental program 128
repacking product 121
repetitive defects, troubleshooting 58, 93
reports
error 76, 105
service 105
Reports menu 59
resets
NVRAM initialization 106
restoring
defaults 104
factory defaults 104
restoring default settings 64
NVRAM initialization 106
rollers
image formation operations 21

S
safety 17
safety statements 135, 136
scatter, troubleshooting 92
secondary service menu 105
sensors
jam detection 29, 34
paper jam 29, 34
pickup and feed components 0
sequence of operations 4
service
repacking product 121

Service menu 64
secondary 105
service menu 104
service menu settings 104
cleaning mode 104
powersave 104
restoring defaults 104
service page 60
settings
network report 60
restoring defaults 64
System Setup menu 61
shipping product 121
size specifications, product 124
sizes, media
default, setting 61
skewed pages 92
smeared toner, troubleshooting 90
software
software license agreement 116
solenoids
DC controller 7
paper feeder 33
pickup and feed components 0
solving
direct-connect problems 99
network problems 99
solving problems
control panel messages 68
specifications
electrical and acoustic 124
physical 124
specks, troubleshooting 89
spots, troubleshooting 89
standby operation period 4
start-up failure 14
status
supplies, printing report 60
STBY operation period 4
streaks, troubleshooting 90
supplies
counterfeit 114
non-HP 113
recycling 128
supplies status page 60
support
online 120
repacking product 121
switches
DC controller 7
System Setup menu 61
systems 6
major product 2

T
table, repetitive defect 58
TCP/IP
settings 66
technical support
online 120
repacking product 121
temperature
abnormal high 15
abnormal low 14
controlling fuser 13
termistor (TH1) 12
text, troubleshooting
misformed characters 91
TH1 (thermistor) 12
thermoswitch (TP1) 12
tips iii
toner
loose, troubleshooting 90
scatter, troubleshooting 92
smeared, troubleshooting 90
specks, troubleshooting 89
toner cartridges
memory chips 115
non-HP 113
recycling 128
supplies status page 60
warranty 112
touch screen, clean 95
touchscreen
calibrating 106
TP1 (thermoswitch 12
transfer stage 24
Tray 1
jams, clearing 81
settings 61
Tray 2
paper path 27, 31
settings 61
trays
jams, clearing 82, 84
settings 61
troubleshooting
about 41
blank pages 96
checklist 41
control panel messages 68
control-panel checks 44
curled media 92
direct-connect problems 99
faded print 89
jams 80
LED diagnostics 46
lines, printed pages 90
loose toner 90
network problems 99
NVRAM initialization 106
pages not printing 96
pages printing slowly 96
power-on 44
problem source 43
repetitive defects 93
skewed pages 92
text 91
toner scatter 92
toner smear 90
toner specks 89
USB cables 96
wrinkles 92

U
undercurrent protection 16
usage page 60
USB port
speed settings 64
troubleshooting 96

V
vertical lines, troubleshooting 90

W
WAIT operation period 4
warnings iii
warranty
license 116
product 110
toner cartridges 112
waste disposal 129
wavy paper, troubleshooting 92

Web sites
customer support 120
fraud reports 114
Material Safety Data Sheet (MSDS) 130
wrinkles, troubleshooting 92

© 2012 Hewlett-Packard Development Company, L.P.

www.hp.com

CF270-91001
CF270-91001
CF270-91001